

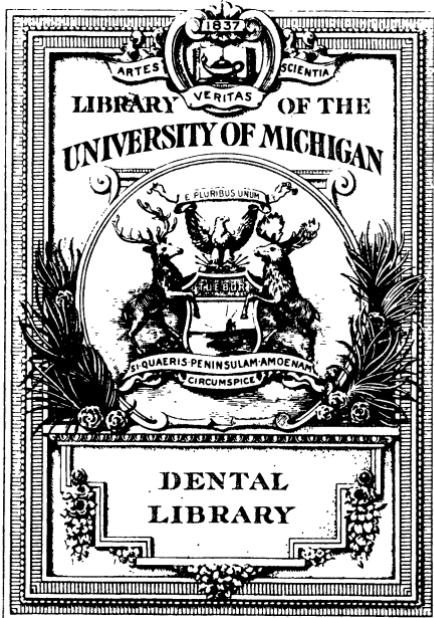
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PROGRESSIVE COURSE OF PRACTICAL INSTRUCTION

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PROSTHETIC DENTISTRY.*

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Prof. of Prosthetic Dentistry and Technics, School of Dentistry
University of Illinois.

CHAPTER III.

APPLIANCES REQUIRED IN TAKING IMPRESSIONS.

The importance of the impression tray is generally considerably underestimated. As a usual thing the operator is satisfied with any of the several appliances recognized as convenient to the case. But there are a number of features which must be understood if success is to be obtained. The impression tray is an appliance made to conform to the general outlines of the dental arch, and is employed to carry the material with which an imprint of either the superior or inferior or fractional portion of either jaws are obtained.

These trays have been made of various materials—sheet tin, porcelain, vulcanite, gutta-percha, copper, britannia metal, papier mache and celluloid.

The results from these trays depend on the judgment of the operator. Considering the merits and the objections of these appliances, would be :

Sheet Tin.—Merit: Easily shaped to suit the dental arch. Objection: Corrodes and is liable to distort on extracting from oral cavity.

Porcelain.—Composition of felspar, silex, kaolin. Merit: Cleanliness and appearance. Objection: Too easily broken when removing from mouth and plaster model, not changeable to fit contour of dental arch.

Vulcanite.—Composition, caoutchouc, sulphur and coloring mat-

*Copyrighted by Dr. B. J. Cigrand.

ter. Merit: Adaptability and cleanliness. Objection: Too easily broken in separating from impression.

Gutta-percha.—Composition, sap of the isonander tree. Merit: Adaptability and appearance. Objection: Distorts too readily on removing from the mouth.

Copper.—Merit: Adaptability and cleanliness. Objection: Metallic taste and bends too easily.

Celluloid.—Composition, 100 pyroxylin, 40 per cent camphor, 2 oxide of zinc. Merit: Appearance and hygiene. Objection: Breaks too easily and disagreeable odor.

Britannia Metal.—Composition, tin, 90; antimony, 8; copper, 2. Merit: Adaptability, cleanliness. Objection: Tarnish and thickness.

The britannia trays are the ones mostly employed and they have been fashioned into a great variety of shapes and sizes. It will be necessary to consider these trays, since they give excellent results when properly treated. There are at present about 13 models britannia trays, as follows:

The S. S. White Ordinary.—The common upper and lower impression cup. (Fig. 1.)

The Southwick (Dr. A. P.).—This has a raised palatine border to prevent plaster of Paris from dripping. (Fig. 2.)

The Dorr (Dr. H. I.).—Used in lower cases and has posterior lingual wings. (Fig. 3.)

The Franklin (Dr. B. W.).—Is used mostly in lower impressions and has a slot on both sides to admit of secondary pressure. (Fig. 4.)

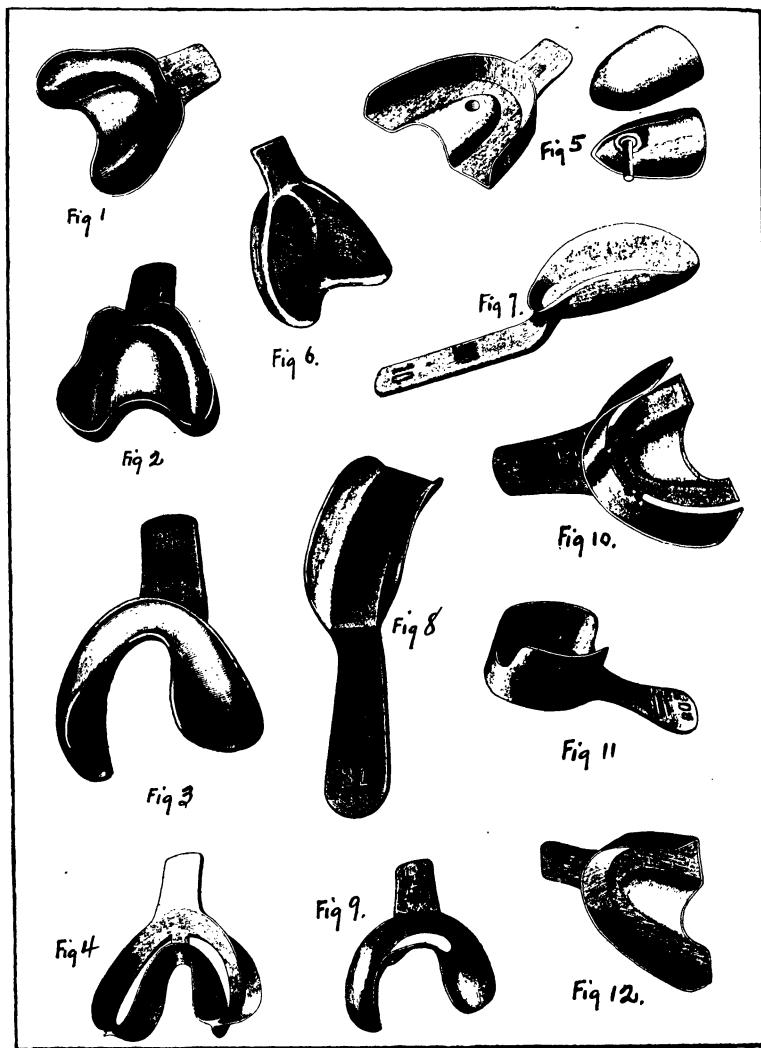
The Wardle (Dr. T.).—Employed in full upper impressions; has a movable palate for secondary pressure. (Fig. 5.)

The Foucke (Dr. J.).—This tray has a canvas lining on a metal skeleton and is constructed for secondary pressure. (Fig. 6.)

The Mathews (Dr. L. M.).—This is a small tray used in taking impressions of a few teeth in either jaw. (Fig. 7.)

The Burchard (H. H.).—The rim adjoining the handle is cut away, allowing it to be placed in the mouth with pressure toward remaining lower incisor teeth. (Fig. 8.)

The Harris (Dr. G.).—Used to get impressions of lower bucco-



lingual cases. It has an opening at labial portion to admit the remaining natural teeth. (Fig. 9.)

The Wiley (Dr. J. K.).—Employed in full cases and has adjustable wings or border. The palate can also be changed. Upper and lower trays. (Fig. 10.)

The Melotte (Dr.).—Used to get impression of but one tooth. (Fig. 11.)

The Weirich (Dr. G. M.).—Has rubber rim, hence adjusts itself to contour of the mouth and in full cases makes it easy to break the impression. (Fig. 12.)

The Long (Dr. J.).—Employed in full cases where there are still a few remaining teeth. It has a flat dental arch to complement the natural teeth. (Fig. 13.)

Dr. W. Story How has aptly said that "the insertion of the tray may seem a trifling matter to the operator, but it is frequently not so to the patient. Few lips will admit an impression tray direct without an amount of stretching at once inconvenient and painful; and in some cases, to secure a correct impression without subjecting the patient to serious discomfort, will require much care and expertness on the part of the operator. Unusual width of the jaw is not infrequently associated with a contracted commissure, and in addition the muscles of the mouth may be rigid and unyielding."

In very difficult cases excellent results are obtained by following the direction of Dr. H. H. Burchard, who says: "The necessary changes to a tray for a full denture are best or most accurately made by forming a plaster model in a wax impression, then by means of pliers, files, shears, nippers and the horn mallet bring an approximate tray into the correct position of about one-fourth of an inch larger at all points and parts than the model."

To produce a tray of special design Dr. B. H. Catching has made the way extremely simple. A piece of base-plate wax is molded to fit approximately the parts to be inclosed by the tray. This, when removed from the mouth—or model if it be formed upon a model—is chilled and a wax handle formed. A plaster matrix is made of the tray in an exterior and interior section. The walls of the matrix should be thin. After separating the halves of the matrix the wax tray is removed, the matrix bound together and the space formerly occupied by the wax is filled with molten fusible metal. If the tray is to be made of an alloy having a higher melting point the matrix is

to be formed in sand and plaster mixture and well dried before the metal is poured.

Invariably select a tray which is about one-eighth of an inch larger than the dental arch, and do not hesitate to cut the tray at such points as may indicate a more convenient position in the mouth. It is decidedly more important to get a perfect impression than to preserve impression trays.

(To be continued.)



DENTAL THERAPEUTICS.

By GEO. W. COOK, B. S., D. D. S., CHICAGO, ILL.

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CHAPTER III.

We alluded very briefly to the actions of oil of cloves on the irritable tooth pulp. We stated that its first action on protoplasm is that of irritation. The second stage of action is paralysis of the protoplasmic structure. It will be understood, however, that if the application of oil of cloves be repeatedly applied to the pulp when in a healthy state, it will irritate and then lessen the irritability of the tissue substance until it has established a diseased condition by causing a hyperaesthetic and then inflammation, which under ordinary circumstances will terminate in the recurrence of health. When the physiological function of the pulp is re-established it is usually left in a state where irritation will take place more rapidly and become more severe. In other words, there is every appearance of a normal physiological process going on in the pulp itself, and it is usually left in a state where irritability is much more easily established.

We have previously stated that some of these volatile oils are almost entirely made up of a chemical constituent, while others are entirely void; still others are comparatively free of this chemical element. In addition to the hydrocarbon compounds there is incorporated into the molecular structure of these volatile oils some oxidized aromatic substance, such, for instance, as the phenol, ketones and aldehyde acids. These aromatic substances will sometimes on long standing crystallize out into a solid form, and is usually spoken of as steroptene. There is another form of terpenes that will remain in the oily substance and does not evaporate under any ordinary circumstances. This is known as eioeoptenes.

There is a nitrogenous body found in a few of these oils which is looked upon as being in the form of a cyanogen compound. There are some of these oils which have a pungent disagreeable odor which is considered to be due to a form of sulphur compound.

Since these volatile oils are classed among therapeutic agents, it must be borne in mind that they act upon protoplasmia as a foreign substance, consequently are irritating.

We have previously mentioned the fact that most drugs that are used for their therapeutic purposes have an elective affinity for certain definite tissue structure. Since the volatile oils are but little used other than for local application, they seem to have but little, if any, special affinity for any specialized cells, but are irritants to all protoplasmic structure.

It must also be borne in mind, in this connection, that the higher the cell organization is, the more irritating effect would the volatile oils have upon the tissue structure. For instance, in the study of tissue cells it has been clearly demonstrated that the external epithelial structure is by no means as highly organized as is the nerve tissues of the highly organized animal body; consequently we would expect the irritation would be far greater in highly organized tissue structure, like the pulp of the tooth, than the same amount applied upon the external epithelial structure.

It has been found that the essential oils have a far greater irritating power on the higher fungi or the algae than upon the low form like the bacterial cell. So, it is fair to presume that when they are applied to the mucous membrane they would have far greater irritating power than when applied to the external skin. Those that penetrate more readily into protoplasmic structure are the ones obtaining the greatest amount of terpenes. However, it is well to presume as a general proposition that all volatile substances are more or less irritating. When the volatile oils are applied to the skin locally they produce a feeling of warmth and an itching sensation, and upon examination there will be found a redness of the skin, due to the penetration of the oil and irritating the terminal sensory nerve fiber, which act upon the vasomotor center and cause a dilatation of the arterioles. A strong solution of the volatile oil acts as a great irritant to the mucous membrane of the mouth. On passing into the stomach these oils will have about the same feeling of sensation of warmth as when in the mouth. When administered in small doses they give a feeling of comfort, sometimes will increase the appetite, and will give a relief of feeling of extreme fullness after meals.

As has already been stated, the chemistry of the volatile oils is by no means thoroughly cleared up; consequently their therapeutic action differs very considerably according to their chemical formulas. They are principally used as flavoring agents. Their dental use

has been almost entirely confined to application to the pulp for the relief of hyperaemic or inflammatory condition, and for disinfecting purposes.

As has already been stated, oil of cloves has had the preference almost universally in the treatment of inflamed pulps of teeth. It has been previously pointed out that the histological structure of the pulp and its environing conditions render it questionable whether or not it can be treated in such a manner as to place it in a normal condition and have it remain so after the tooth has properly been filled. There is that liability of its again becoming irritated and taking on a form of re-calcification or degeneration, and eventually setting up disease-processes either in the pulp itself or in some remote part of the nerve trunk supplying the tooth, and bringing about a more or less uncomfortable or serious condition, whereby the tooth may again have to be opened up and the pulp be removed before the tooth can be made useful.

It has been pointed out that the usual cause of the irritation, so frequently established in the pulp, is due to the approach of certain forms of bacterial life, which may approach very nearly the pulp and in their activities, produce substances that will destroy tooth-structure and at the same time produce other agents which will act as toxic or irritating substances to the protoplasmia.

At the present time we understand that in the activities of the micro-organisms they not only form an acid or an alkaline substance, but that they may form a toxine or ptomain which is capable of setting up pathological lesions in certain protoplasmic structure; thus, while the bacteria may be acting quite remote from the pulp of the tooth, they may produce an agent capable of having an elective affinity for this special histological and physiological connective tissue-structure in which there is present nerve-filaments. For it is a well-established fact that micro-organism has the capability of forming a substance that only acts upon a certain kind of cellular protoplasmia. And with our present knowledge of what goes on in the rapid degenerative processes of the tooth, we are pretty thoroughly convinced that it is only the substance that bacteria produce and not the bacteria themselves which changes tissue from a physiological to a pathological process. Now that we rec-

ognize that this is true, the first duty in the treatment of diseased tissue, and especially in that of the tooth, is to remove by mechanical means all the carious dentine, which will also remove the bacteria which are producing this toxic substance, either causing irritation or stimulation of the pulp.

It is a very well-observed fact that decay or disintegration of the dentine will sometimes approach the pulp to such an extent as to render it entirely uncovered without the tooth ever having inconvenienced the individual to any great extent, while in another tooth the carious process may have only passed through the enamel and the individual may suffer a great inconvenience from pain and neuralgia. In the first instance, the bacteria which are operating are very likely producing no substance that is acting upon the prolongations of the odontoblast, which is a highly organized protoplasmic structure and is capable of being stimulated by certain bacterial products, or these products may not only act as a stimulant but as an irritant. If this bacterial product is such as to bring about a stimulation of the odontoblastic membrane and the prolongations which permeate the dentine, instead of there being established a hyperaemic or an inflamed condition, the cells of the odontoblast will revert back to some of the former physiological functions, which are those of depositing lime salts or inorganic matter into the organized matrix of the tooth; while if these bacterial products have an irritating property there will be established hyperaemia and inflammation, which will cause the pain and discomfort.

Observations and experiments have pretty conclusively shown that a diseased condition of the tooth, such as is known as caries, can be brought about by a variety of species of bacteria, while one of these species is capable of causing a rapid disintegration of the inorganic substance of the tooth, it may produce in this process a substance that is only stimulating to the protoplasmic structure of the pulp, while on the other hand a bacterium may cause but little destruction of inorganic substance, but may produce a substance that has an extreme irritating influence on the protoplasmia. So, it is pretty safe to say that the discomfort that follows dental caries is due not so much to the extent of the decay or to its locality, as to the product that is being produced by the action of bacteria in the locality in which the tooth is undergoing degeneration.

It is known that certain forms of bacteria produce certain sub-

stances which are very closely allied to the alkaloids found in the vegetable kingdom, and they are according to their source upon the higher organized cell organization. Some of these alkaloids, as has already been stated, have a certain selective affinity for certain tissue cells and act upon these cells either as a stimulant or an irritant. Of course, it must be remembered that the quantity of this irritating or stimulating substance cuts a very important figure in the kind and extent of the disease-process that they produce.

I think that it is understood that the disease of the pulp is brought about by some bacterial product that is capable of bringing about an irritation of the protoplasmia, while the bacterial substances only cause cell-stimulation of the pulp, in which case we have the calcific deposits so frequently found in connection with diseased tooth-structure. Of course, it must be understood that when these odontoblastic cells revert back to a former physiological function and are capable of depositing certain inorganic substances, that these substances may, and do, most always become an irritant. Of course, it is understood that if this stimulating influence is a very active one, the odontoblastic cells may become irritated or undergo a rapid degeneration, thus bringing about irritating influences. While on the other hand the stimulation is but slight, the organic substances are slowly deposited and the protoplasmic degeneration is very slow, the organic matrix gradually disappears; and secondary dentine usually has a very considerable less organic substance than does the normal dentine of the tooth. Consequently, if the inorganic substance is deposited in a symmetrical manner, there is very little liability of irritation for a considerable period, if at all. This is a condition that is brought about in advanced age when the degenerative processes of the pulp are established through a mechanical rather than a chemical action, where the teeth are badly worn and the pulp has receded to a considerable extent back from the mechanical abrasion. While in the case of the deposits being brought about by certain chemical action this usually takes place from a particular direction, as the external stimulus approaches the pulp from a certain direction where there is only a portion of the cells that are stimulated, and consequently their inorganic deposits are very uneven and are more liable to become the source of irritation and in this way be the means of sometimes being the cause of pain and discomfort, while on the other hand, instead of the bacterial

products being a stimulus to the odontoblastic cells, they at once become an irritant which causes all of the manifestations of hyperaemia, which is the first indication or the first step in a diseased process. The second step is inflammation. It must be borne in mind, however, that a substance that is a normal stimulus can, and does, frequently pass over from a normal to an abnormal stimulus.

We have previously stated that a great majority of the drugs act through their chemical affinity for their forms of living matter. They probably enter into a combination with certain forms of protoplasmia. Now, if that drug is forced upon the cellular structure beyond the capacity of the protoplasmia to combine chemically, it then becomes an irritant. That is exactly true of a certain chemical substance that is formed by bacteria and has an affinity for certain cell-structure. If that substance is present in greater quantities than the cells are capable of taking up, it becomes an irritant.

(To be continued.)



OPERATIVE DENTISTRY.

By R. B. TULLER, D. D. S.

(Clinical Professor of Operative Dentistry, Chicago College of Dental Surgery.)

CHAPTER II.

FORMULA NAMES.

The names which have thus far been developed are sufficient for the designation and easy recognition of instruments belonging to any order, sub-order, class or sub-class. They are not, however, sufficient for the recognition of the individual instruments of any one of these divisions of forms. The blade of a hatchet or hoe excavator may have an angle with its shaft varying from a slight inclination to a quarter circle, or even more. Any angle of blade between these may be effective for some particular operation. A similar variation occurs in the widths and in the lengths of blades.

Now, any of the widths may be combined with a great diversity of the lengths and these again may be combined with a great diversity of angles.

We readily see that in this way we arrive at a vast multitude of slight variations in these instrument-forms, and any attempt to specify individual instruments without some rule for limiting the number becomes hopeless.

It is well known that the tools of mechanics are specified by formulae so that a man may go into a store and specify exactly what he wants and so that the man who waits on him knows exactly what is wanted; thus, if it is an augur, it is designated by its diameter as quarter-inch, half-inch, inch, inch and an eighth, etc. Chisels vary in form to some extent, according to the kind of work for which they are intended, and then vary in widths, varying but the sixteenth of an inch or less. The system needs to be very complete and is so. No mechanic would buy tools that were not made accurately to definite formulae—definite descriptions and measurements.

In the matter of screws and bolts, which, of course, are not instruments, but serve to illustrate, the variety of kinds and sizes and lengths of each, kind and pitch of threads, etc., is almost endless. There is necessity for all these in the wide range of uses to which they are put.

We could run into almost as wide a variety of dental instruments. With or without formulae we can multiply instruments to a very complex degree by making but slight variations of angles and then add a number of variations of blade lengths and widths for each angle or each particular style. We are apt to have too many—a confusion of excavators, chisels, pluggers, etc.

The formulae arranged in this system of Dr. Black's has an unlimited scope so that a dentist may order anything made to suit his fancy as to long and short blades (and between) and angles from one to twenty-five degrees or more, but for cutting instruments made up and kept in supply stocks, three or four variations of each form would undoubtedly be the limit—one large, one small and one or two between. From such a variety one could select sets (less than the whole number in the set, perhaps) that would be satisfactory to almost any one. It will be seen that the infinite variety of widths, lengths and angles of blades without definiteness or restriction of any kind, except the fancy of those ordering instruments, leads to chaotic conditions.

Dr. Black has arranged cutting instruments in definite sets in which the formula names run on definite gradations for all instruments of each set. In this way they are easily learned and remembered. Take a hatchet excavator, for instance, and, at most, four angles are enough and three would probably satisfy most operators. Now, with three angles combine one long blade of definite width, one medium of definite width, and one short blade of definite width, and we have a set of nine instruments. Now repeat the same in hoes and there is a set of nine more, which are termed *ordinary* sets. A fourth angle added to the above forms would add six more instruments with so little variation in shape that scarcely any one would deem them of enough advantage to multiply instruments to such an extent.

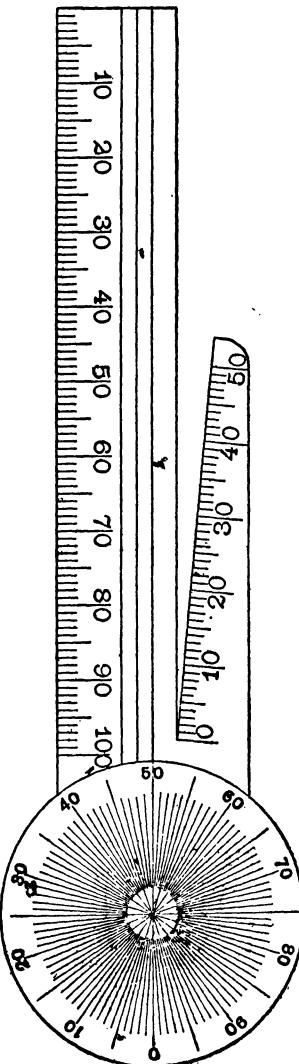
To enable the operator to measure an instrument to determine its formula name and numbers, Dr. Black devised a gauge which may be procured at supply houses in either steel or cardboard. The cut shows it to have a circular head divided, not into fractions of an cut shows it to have a circular head divided, not into 360 degrees, but into an even hundred. We are used to the astronomical we say it is at an angle of 45°. In the centigrade circle it would be 12½°. A right angle in the centigrade is 25°.

The circular part of gauge measures angles; the bar attached measures lengths, and the V space between the bar and offset measures the width of blades (also burs, wires, etc.) in tenth of millimeters.

The set of cutting instruments given below has been designed especially for use in teaching instrument forms and instrumentation, and for use in Infirmary practice. This set has been chosen with the view of simplicity of arrangement of a sufficient variety of forms following a systematized order that will be easily learned by the student. Each instrument will be designated by its order, class and formula name, as Hatchet Excavator 12, 5, 6, which accurately describes the essential parts of the instrument. The first figure gives the width of the blade in tenths of a millimeter, the second figure gives the length of the blade in millimeters; the third figure gives the angle of the blade with the shaft in hundreds of the circle. These numbers are stamped upon the handle of each instrument as a guide to the student in learning the particular instrument forms.

The formulas are intended to cover only the essential forms of the working points not designated by names of instrument forms now in use; as in Excavators, Hatchets, Hoes, Spoons, etc.

All of the cutting instruments in this list are recommended to students. Each student will be required to have in his case those not marked with a star.



ters. The main bar measures things in millimeters. The decimal system is used because scientific work is generally so recorded.

FORMATION OF FORMULA NAMES.

For the formation of formula names for excavations three points are considered—viz., the width of blade, the length of the blade and the angle of the blade with shaft. Other points are to be guided by rules given in Chapter I.

These (width, length and angle of blade) are very exactly the points that go to make up the individuality of the several instruments of an order, sub-order, class or sub-class, and will identify each. The particular conformation of the shanks and handles is left to manufacturers or to the taste of the person ordering.

THE MEASUREMENTS OF INSTRUMENTS.

In the measurement for the formation of formula names, first try the blade in the jaws of the V-shaped slot and read off the width in *tenths* of millimeters on the beveled bar and set this down as the first figure in the formula.

Next measure the length of blade from center of angle to the cutting edge in *millimeters*, and set down the second figure of the formula. Now find the angle of the blade with the shaft, and set that down as the third figure of the formula.

In making this last measurement lay the handle of instrument on the main shaft of the gauge parallel with the parallel lines and with the point turned toward the small numbers of the circular head. Now slide the instrument along until the angle of the blade coincides with one of the lines of the graduated circle, being careful to keep the handle parallel with the lines on shaft.

If we measure a hatchet and the numbers give width 12, length 5, angle 6, the formula name will be read, "Hatchet, 12—5—6." If it be a hoe the formula name will be "Hoe, 12—5—6." The class name always precedes the numbers.

In this way the name of each instrument of the set is given, no matter what its class or size, as "Spoon, 20—9—12"; or "Spoon, 15—8—12"; or "Enamel Hatchet, 15—8—12"; or the same, "10—6—12," etc.

It is also understood that the edge of cutting instruments shall be considered at right angles with the length unless otherwise specified. When some other angle of cutting edge is desired it is measured in the large numbers in the last quarter of the graduated circle by moving the instrument without turning it over and still

keeping it parallel with the lines on the shaft until the cutting edge coincides with one of the Centigrade lines, and that number is set in brackets following the width of blade, thus: Gingival margin trimmer, 20—[95]—9—12. That shows width of blade 20, angle of cutting edge 95, length of blade 9 and angle 12.

(In the last issue the types read *sealer* in several instances where *scaler* was intended. In another place it should read *plane* instead of *plant*.)

(To be continued.)

Note.—One more chapter will probably complete the instrument formula so far as we can enter into the subject.





ORIGINAL CONTRIBUTIONS

VARIATIONS IN THE DEVELOPMENT AND DIVERSITY OF TOOTH TISSUE.

DR. JONATHAN TAFT.

This caption implies that there is a diversity in the density of the teeth of different persons, and in the same person at different periods of life, and indeed apparently under about uniform environment. But much more is this apparent in the ever-varying vicissitudes to which humanity is subjected.

Doubtless heredity, which is the transmission of physical and mental conditions, defects, and peculiarities, from one generation to another, has much to do in the production of defective structure of the teeth of mankind. Variations in this transmission often occur because of dissimilarities between progenitors.

How often is it that parents are unlike in physical make-up? And this is shown in their teeth as pronouncedly as in any other tissue. If the teeth of both parents are alike defective, those of the offspring will be equally so, and often worse. Or one parent may have good and the other defective teeth, and the offspring may then partake of the quality of one or of the other. The results that sometimes occur under such circumstances are very peculiar and striking, indeed. Further on this line I would suggest that the subject of heredity is worthy of more attention, study and investigation than has generally been given to it, and especially so in regard to the teeth.

Now, that the teeth vary very much in their density is shown in a variety of ways. The skillful operator and close observer in his daily work will have ample evidence of the variations in density that obtain in the teeth of different persons and in the same person at different periods of life. In the normal uninterrupted growth and development of the teeth up to twenty-five or thirty years of age,

*Read before the Southwestern Michigan Dental Society April 8, 1903.

they increase in hardness and in some instances beyond this, even five to ten years. In all cases the permanent teeth are easily cut with the excavator or drill for five or ten years after eruption; this is true even of the better varieties of teeth. The readiness with which some fracture under percussion or blows from a hammer, or from gradual pressure, as in a vise, when compared with those of firmer texture, show a radical difference in solidity and firmness.

The examination of sections of many teeth with the microscope shows a condition of the tooth-structure quite divergent from the typical. The varieties that appear in the dentine are shown in the enamel rods, in the defective calcification, rendering them less dense than normal. In well-formed enamel the rods converge to a central point in the crown of the tooth. But in defective enamel this convergence does not obtain, but a divergence to a greater or less extent is present. And, furthermore, the union of rods is much less firm in defective enamel. There is quite a variety in the surface of the enamel; in some it presents a smooth and highly polished surface, while in others there is a more or less pronounced want of the bright and glistening appearance seen in the more perfect teeth. Indeed, they sometimes have a rough and corroded surface. The canals in the normal dentine, like the enamel rods, converge to a common center in the crown of the tooth, but a perfect arrangement of them is quite exceptional. They are frequently many degrees out of proper inclination and being much more curved than normal. In some cases the canals are greater in number in a given area than normal, while in other instances they are less in number than normal, so as to preclude the formation of a perfect tissue; this abnormality consisting in part at least of irregularity in the arrangement of the canals through the dentine, and defective adjustment of the canal rods.

There are often found in the dentine defective areas where there is imperfect calcification and a deficiency in the proper supply of canals. These areas are called interglobular spaces, and when attacked by decay go very rapidly. The dentine and enamel are made up of organic and inorganic material. The former first takes on organic form and arrangement; in other words, the odontoblasts and network that constitute the matrix in which the lime salts are deposited, are arranged in accord with the typical form for normal dentine. It should be kept in mind that in these developing proc-

esses interruptions may and often do occur, these interruptions varying greatly in degree and extent. These interruptions or defective areas are sometimes very limited in extent, affecting only a mere spot, and in others much greater in outreach, sometimes involving the entire body of the dentine, and of the enamel as well. The following are some of the conditions under the influences of which these defects occur:

Faulty nutrition. This may occur from an insufficiency of food, or from inappropriate food, or its improper preparation. In illustration of this statement it may be said that a large proportion of our bread supply is in its preparation almost wholly deprived of its bone-making material. The lime salts are by the bolting process removed with the bran, the starch and gluten being retained—these constituting the flour of which ninety per cent of our bread is made, and with this it is impossible to make the most nutritious bread. The question of the presence of lime salts in food is a very important one—one with which those who prepare our food should be thoroughly familiar, and especially is this true of those who prepare food for the supply of infantile life. Another very important question is the character of the food supply, which the mother receives during the period of lactation. Those who have given close attention to the subject inform us that very few mothers afford the children, in infancy, food supplied with bone phosphate in sufficient quantity to meet the demands of the growing bone-structures of the body, and especially of the teeth. This occurs, of course, because of an insufficient supply of proper food by the mother.

In this respect there is a very common deficiency; indeed, in many instances the bony tissues of the child are literally starved by this privation. The child is not the only sufferer in this direction; the welfare of the mother is jeopardized as well. Nor are these things the only points of danger. The digestive function of either the mother or child, or both, may be defective; and if of the mother only, it is impossible that she could afford proper nutrition for her child. The digestion of the mother may be good, but that of the child faulty, when the processes of digestion and assimilation will be defective, and then faulty structures will necessarily be made. Good hygienic conditions must be afforded to both mother and child, if the growing and developing processes are to bring about strong and normal tissue.

All the conditions above may be perfect, and yet diseases of some form or other may step in and interrupt, pervert, or destroy the processes of development and growth, more or less persistently. We will not attempt in this paper to discuss these further than to say that any and all diseases of the general system are inimical to the proper organization and growth of all structures of the body, but especially will this apply to the teeth. Affections of the skin and mucous membrane of the mouth and alimentary canal, such as measles, scarletina, smallpox, diphtheria, stomatitis, and indeed any dermal affection, are those most injurious to the growing teeth, and very liable to injure the teeth during the time of their calcification.

Now, these few suggestions may give us some intimation as to what should be done if we would secure the best bone tissues of the body, this applying to the teeth as well as to any other hard structures. Oftentimes local affections spring up in the mouth and its adjacent parts that are injurious to the growing teeth. The development of the organic structure of the teeth is a very intricate and delicate process. The formation of the odontoblasts may be easily impaired, and so, these organs being defective, a perfect structure is impossible. But even when these are well formed and properly developed, failure to secure good calcification may occur from a faulty condition of the lime salts, while in the plasm, or from a want of energy in the calcifying process—viz., the precipitation and arrangement of the precipitated material in the matrix already prepared for it. For perfection in this work, a certain balance of forces is indispensable for the best results.

Now, considering all these things, may we not begin to understand how easy it is for the faulty structures to be made, and how many embarrassments there are that stand in the way of structural perfection?

In addition to the inferences that may be drawn from the above considerations, I will venture for the remainder of this paper to draw upon the experience and observations of a few noted practitioners, who have had large experience in treatment for securing good bone tissue, and especially that for the teeth. These quotations have reference mainly to the supplying material requisite for the bone-building tissue, by the administration of lime salts in the form of bone phosphate. The use of bone phosphates for securing good dental tissue receives less attention now by dentists than in former

years. It is, however, largely used by physicians in the form of various phosphate syrups for the various general affections, especially that of the nervous system, of the lungs, etc.

It is stated in Championniere's Journal of Pract. Med. and Surg., that "Dr. Lavau, of Birac, called the attention of the Academy of Medicine of Paris to the importance of sulphuret of lime in the regeneration of bony substance. Mr. Pavau observed, more than twenty years ago, that this agent, diluted in olive oil and used in frictions to destroy itch, induces enlargement of the joints of the fingers. This observation led him to prescribe frictions with sulphuret of lime on the head of rickety subjects whose fontanelles were excessively large or persisted beyond the normal period, and he obtained with surprising rapidity the ossification and obliteration of these membranous apertures. Mr. Lavau, therefore, surmises that the same treatment may perhaps be also applicable to the secretion of the periosteum in the great process of the reproduction of bone. If such is the case, this agent might probably prove useful in promoting the deposit of dentine over exposed and sensitive nerves.

Phosphate of Lime in Dentition.

In the course of a very interesting paper on the medical properties of the alkaline hypophosphites (*Ibid*), Mr. Jno. Taylor speaks thus of their relation with dentition: "The impulsive demand for tribasic phosphate of lime in the construction of the teeth contributes to the disturbing influence called the fever of dentition; and this disturbance is often found to be most pyrexial in children that have been ill fed, or that have been too long suckled, both instances showing the want of a due proportion of phosphates. In the robust there is sympathetic spinal irritation, tending to convulsion; in the feeble and cachectic, sympathetic nausea and purging, wearing out existence. In both forms have I given hypophosphite of potash with marked success; in the first, or asthenic form, with solution of acetate of ammonia and syrup of rhubarb; in the latter with acacia and some tonic or aromatic tincture. It is delightful to witness the consolatory effect upon a fractious, pseudo-inflammatory child, some cases of minor intensity being cured by the first effort, say, eight grains of the hypophosphite in a two-ounce mixture. Those of the asthenic form had considerable dyspnoea, cough, pale dry skin, and a feeble pulse; some requiring ammonia as an adjunct; others not; but in all the impressive power of the hypophosphite, with its appro-

priate adjunct, was most satisfactory—frequently but simple syrup or mucilage sufficed.

The Absence of Phosphate of Lime in Mother's Milk a Cause of Infant Mortality.

"The *Courrier*, of Paris, in a very able article on the mortality of infants, attributes it in a great many instances to the insufficiency of the development of bone, and adds that the milk of a healthy nurse ought to contain two and one-half grams of phosphate of lime to the ounce, which is the basis of all osseous matter. From observations made, it appears that scarcely one in ten women has milk coming up to this standard, and, therefore, the infants, it is said, necessarily perish or grow up sickly, and probably deformed."—*Med. Record*, and *Boston Med. and Surg. Journal*.

Phosphates of Lime; Its Assimilation and Therapeutical Employment.

"We notice in *Le Mouvement Medical* (No. 17), a summary of a recent published Memoire of M. M. Dusart et Blanche, who have made a number of experiments upon animals and men, to ascertain the action of the gastric juice upon phosphate of lime. They found that much of the phosphate of lime of commerce is nothing more than carbonate of lime, and to this cause they attribute the varying experiments of different observers. They found that the hydrated phosphate of lime, and recently precipitated is the most suitable for assimilation; and in their experiments they employed the lacto-phosphate of lime, the ultimate result of the action of gastric juice upon phosphate of lime. They made some experiments on guinea pigs, in whom they reduced fractures, and they found that the increase of weight of the bones of such of the animals as were submitted to the action of the phosphate of lime exceeded that of others placed under ordinary regimen more than thirty-three per cent, though all the animals were given exactly the same quantity of aliment.

"They administer two grains of the lacto-phosphate of lime to the ounce of syrup, daily, in soup.

"Dr. Perate has found this lacto-phosphate of lime extremely beneficial in dyspepsia, from insufficient secretion of the acid of the gastric juice.

Treatment of Certain Diseases of the Osseous System.

"For a long time past the calcareous salts have been employed in

medicine. The numerous experiments of Chossat, who established in a vigorous manner the fact that certain animals did not find in their ordinary food sufficient mineral substance for the reparation of losses of osseous structure, have increased considerably the uses of these agents. It is evident, in fact, that in order for the physiological equilibrium to be maintained, alimentation must be completed by addition of calcareous material to keep up the solidity of the skeleton, and to prevent the bones from becoming fragile.

"In cases of rickets and osteomalacia, Bouchut prescribed phosphate of lime in quantities of from two to five grams in the day. Piorry gave this agent to children in doses varying from five to ten grams, it having been reduced to an impalpable powder and mixed with a soft substance, as cream or marmalade. In many cases this physician served the phosphate of lime with iodide of potassium. Guersant and many others prescribe eight to ten small pastilles to be taken every day, each containing three centigrammes of lactate of iron and five centigrammes of phosphate of lime. In their observations on men and the lower animals, M. M. Gosselin and A. Milne-Edwards made out that in cases of fracture the necessary time for consolidation was notably shortened after the administration of phosphate of lime with the food.

"A book has lately been published in Paris, by M. Dusart, on the physiological and therapeutical properties of phosphate of lime. The author maintains, after numerous experiments in the animal kingdom, that this salt is the natural exciting agent in the functions of nutrition; that it induces the albuminoid matter to assume the cellular shape, and that it controls the formation of tissues. In short, according to M. Dusart, phosphate of lime is eminently an agent of nutrition. This view holds good, also, in respect of the vegetable kingdom, and the author asserts that the salt in question is concentrated in the leaf-bud, but is almost absent from the fully developed leaf, so as to become concentrated in the seed preparing for the ultimate development of the embryo. M. Dusart points out that the phosphate of lime is always conjoined with nitrogenous matter in plants, and that the relative proportion of the salt and the nitrogen is always identical, wherever they are found. In animals the same phenomena take place, and, when they are made to feed much upon the phosphate, they absorb more food, and increase

rapidly in weight, owing to the transformation of the albuminoid matter contained in the food into muscular fiber."—*Lancet*.

CASES CITED.—Mr. J., aged twenty-two, sanguine-bilious temperament. Has twenty-eight permanent teeth erupted. They are full-sized, well formed in shape, good color, and thoroughly calcified for his age, with perfect blending and enamel caps, and no sign of decay upon them. An older brother has perfect denture in every respect. There are other brothers and sisters, who are said to have as good teeth as these which I have examined.

The father and mother of this family have hardly any teeth left in their mouths. They have been decayed many years; consequently these children would inherit poor teeth. Now for the hygiene which prevented that calamity. During the infancy of some of the children, and before the two brothers, of whose teeth I have particularly spoken, were born, the parents moved to a new state, at the West, and were very thankful to get their wheat ground into meal for bread, as in the first settlement no bolts were put in the mills. A taste for unbolted bread was acquired, which continued to the present day, and no fine flour has ever been used in the family excepting on extra occasions. The members of the family have always enjoyed remarkably good health, which they attribute to their bread diet. Noticing a slight furrow on the labial surface of Mr. J.'s upper central incisors I remarked to him that he must have had a fit of sickness when between two and three years old. He said he did not know, but would ask his mother. His mother confirmed my conjecture, saying that he was sick about six weeks at the age above named.

Miss H., aged twenty, chloric. Has erupted twenty-eight teeth, nearly all decayed. Have a pearly tinge; badly calcified; the sound dentine cut easily. I remarked to her that her "teeth looked as though she lived on fine flour bread and butter." She laughingly said: "That is the only kind of food I desire; I do live on it." She informed me that all her sisters had good teeth compared with hers; that they ate meat, potatoes, milk, etc.; that they laughed at her for her "old-maid way of living."

Miss G., lymphatic temperament, aged thirteen. Has twenty-eight permanent teeth, pearly tint, fissures on crowns of molars and bicuspids, which are decayed, also on many proximal surfaces. The teeth cut soft and indicate mal-dentification. I plugged fourteen cavities

in her teeth. Her father is a miller. The family use the finest of flour. This girl was nursed on milk made from fine flour. Her teeth were starved for the want of phosphate of lime.

The greatest mischief ensues to the teeth when the phosphate of lime is denied to the embryo and infant. It does not replenish her blood with this substance as it naturally occurs in the food, the forming teeth of her child must inevitably suffer, and her own also. When we reflect on the large quantity of lime salts necessary to build up the bony tissues of a child until it is eighteen months old, and the waste of the same material which is daily excreted from the body of the mother and child, we may cease to wonder at the universal decay of teeth in Americans, and smother the sacrilegious inquiry, "Why did not the Creator make the teeth to last as long as the rest of the body?" There is no need of relating more cases. I could do so by the score, for I have inquired of many people in regard to their habits of life in relation to the teeth, and the story is nearly always the same.



PROPHYLATIC ITEMS.

By R. B. TULLER, D. D. S.

(This series of papers began in July.)

How about wooden toothpicks?

Do you ever talk to your patients about them?

I am now treating a case of necrosis caused, I believe, by a piece of wooden toothpick.

The trouble is between the left second and third superior molars.

The diseased bone lies between the teeth and extends buccally somewhat.

I've had similar cases many times. So have you, no doubt.

You probably called it pyorrhoea, and presumed it was caused by calcarious deposit.

When I find no calcarious deposits, and perhaps no tendency to that trouble with other teeth in the mouth, I doubt that being the cause in an isolated case.

Having removed pieces of wooden toothpicks in several instances, I look for them in every case of that kind.

I don't always find them, but presume that after doing the mischief the piece has worked out.

We find plenty of cases where something like this same trouble appears—deep pockets between teeth.

But we know well enough they are caused by calcarious deposits, to begin with, because we find plenty of it and we generally find a number of places where the bone is considerably affected.

Often between all the molars, upper and lower, and even between the roots to such an extent that an instrument may be passed through under the tooth.

The cases I speak of are not of this order, but occur as isolated lesions in an otherwise healthy mouth.

It may be as truly pyorrhoea as the other, but as a rule we find greater disturbance, more tissue involved, and often considerable pain and discomfort and sometimes swelling of the face.

The infection seems to be more active and progressive than in the usual pyorrhoea pockets.

Of course, you know that when we find a carious or necrosed condition of bone, or process, it must be curetted or burred out to healthy tissue;

Then kept cleansed and packed antiseptically until healthy conditions return.

It is often difficult to curette with any certainty of having removed every particle of dead bone.

I have been using as an application in such cases a remedy suggested by Prof. George W. Cook, the "bug man."

It is equal parts of carbolic acid and sulphuric acid, best quality.

There is an antipathy developed between the two when they first come together and considerable heat is evolved. But additional heat is often required to bring about perfect union.

They eventually unite and live in peace and harmony, maintaining an intensely black and tarry record.

It seems a happy combination to assist nature to throw off the necrosed portions of bone. It dissolves tartar, too.

But it is a "king bee" among nasty-tasting stuffs.

I use it in swabbing out the pocket daily, first washing out with peroxide. In some cases pack pocket with pheno-sulphuric acid.

I then pack with cotton saturated with campho-phenique to which has been added formalin to the extent of about one-tenth of one per cent.

This is a very good dressing in all such pockets to keep them aseptic for twenty-four hours, and to keep out food, etc.

I don't imagine we can by our advice suppress the wooden toothpicks, for they are ground out in several mills by the millions and are free in every restaurant and eating-place in the land.

But we can howl about them and put our patients on their guard.

We can explain the dangers and possibly prevent serious troubles.

Probably the quill toothpick is the best thing one can use about the teeth.

And it should be used with care not to be continually wounding the gum tissue.

For *that* sort of thing in itself is conducive to the forming of pockets between teeth.

Normally the gum presents a convex surface from which food readily slides; but once get a concavity established between teeth and food will pack in it and hasten the forming of a deep and diseased pocket, difficult to ever bring back to a good healthy condition.

And no doubt toothpicks ploughing up the gums between the teeth do much if not everything to bring about such conditions.

Metal toothpicks of any kind are not commendable. The touch of metal between the teeth is with most people disagreeable if not painful.

Waxed floss silk or small rubber bands would do better than toothpicks in most cases in dislodging food.

But they are not quite so handy; and one cannot look so contented after a meal; nor so wise walking along the street working a string between the teeth with both hands.

(To be continued.)



HYPER ANAESTHESIA.

BY AUSTIN C. HEWETT, L. L. B., M. D.

In considering any grave subject it is important to keep in mind the meaning of words used, and correct definitions of terms chosen.

All infractions of law, human or divine, may not be criminal, especially when they lack the vital element of crime, the intent; they may better be classified under the head of errors.

An error of judgment may by grossness imply crime; an omission to exercise due care and caution may, and often does, bear the stamp of criminal negligence.

I will instance four cases illustrative of the foregoing; and insist that somebody blundered.

In a city of the United States that I need not name, or give hint of location, class or population, in a hospital that also need not be named, in a month that need not be numbered, in the year 1902, there occurred two deaths from some cause by the authorities not accurately defined. Both of the deceased were men a little past middle age, both were afflicted with tumors, and both were received at the hospital for operations for their removal. In one case an *anaesthetic of chloroform was commenced* to be given, but upon the third inhalation of the vapor of the drug the patient gave a shuddering struggle and died. The operating table had not been reached. The patient had been examined for heart disease by the surgeon in charge, and pronounced a fit subject for chloroform anaesthesia. Post mortem examination revealed no organic trouble of the heart, but the coroner's jury gave verdict of "heart failure."

The other patient was examined preliminarily for organic disease contra-indicating chloroform by the same surgeon in charge, and with more care than was given the first patient. The second patient had been addicted to alcoholism, but was pronounced otherwise a good subject for chloroform. The anesthetic was given, no trouble supervened in the administration, but upon his transfer to the operating table he suddenly died. No operation for the removal of the tumor had been commenced in either case. The hospital interne who administered the anaesthetic, and the surgeon also diagnosed or pleaded "heart failure" as cause of death.

In the same week, in the same year, and in the same city marking the death of the above noted cases, a woman of middle age, in ordinarily good health went to a dental office to get a troublesome tooth extracted. The dentist (whose name I need not declare) obligingly said "yes" to a request for gas, gave it to her "in the usual way," extracted the tooth; meanwhile the patient was cyanotic, spasmodically jactitating, till death came to her relief. Verdict of coroner's jury, "died from asphyxia." The dentist said "heart failure" caused death.

In the same city within easy walking distance of the hospital and dental office spoken of in the same year and month, but in a subsequent week another death occurred, the immediate cause of which came under my personal observation and has left an impression that will last so long as my memory serves me.

Dr. ——, whose name it is not needful to give, a resident of the city, a man of splendid physique, generous natural endowment, an A. M. and M. D., the builder of a large and lucrative practice in medicine and surgery, in years about forty, owner of a beautiful home, graced by a charming wife and enlivened by a bright group of children, became afflicted with a trouble diagnosed by specialists as "sarcoma encephalitis." His mental faculties remained clear, but muscular exercise was greatly impeded. Unaided he could walk only in a circle from right to left. An operation for the removal of the tumor was decided upon, even requested by himself. Removal from his home to the hospital followed and a day appointed for the operation. I was favored with and accepted an invitation to be present and witness the operation. At the hour appointed I found all in readiness, the operating room heated to fully eighty degrees Fahr., all devices for successful operation arranged in the most orderly manner; evidences of aseptic care and clean surgical precautions were everywhere apparent. The patient had been anaesthetized in an adjoining apartment and when brought into the operating room on a wheeled couch and the cloth removed from his face he looked like a strong, robust man recently deceased. The only sign of life apparent to the eye was a shallow catchy respiration, difficult to perceive and only to be seen by the closest watch. The anaesthesia was so profound and such a perfect success (?) that for one hour and forty minutes the only visible muscular indication of life was said respiration and a single retraction of the right leg at the commencement of

the first incision in the scalp. Ether had been the drug used, but after that motion of the right leg chloroform was used, and to such lethal effect that no further consciousness of pain was shown. Respiration, such as continued was several times suspended for short intervals, to be resumed at the bidding of stimulant hypodermics, pressures upon the chest and bandaging the legs from feet to hips with strips of elastic rubber, wound tightly and smoothly. From start to finish of the operation it was a "battle royal," a fight for life, the patient against the anaesthetic; not with the shock of the wound. In passing I may say that the surgeon devoted his attention exclusively to his operation. If he gave a thought to the chloroform or to the interne giving it, it was not apparent. So far as the operation was concerned it was an admirable exhibition of learning, nerve and skill.

When the bone was raised exposing the brain I at once saw that the case was hopeless. *Medulary sarcoma* in such a location, and so far advanced! Who that saw could doubt? It was a mercy to the patient that he never came back to life, never recovered from the stupor of anaesthetization. The heart beat on, and the shortening respiration only continued a few hours. Sentient nerves, capillaries and eliminative forces had become moribund before he was wheeled from the operating room, and no wonder. The remarkable incident was that after such an overpowering and continued use of ether and chloroform his heart could continue to beat and respiration continue. Compelled to breathe toxic vapors, in an atmosphere up to near ninety degrees, charged with chloroform vapor so dense that for three days following my wife and daughter complained of my chloroform laden breath.

Was he, as was said of the three others, a victim of "heart failure?" In my next I will give answer to the very natural question, and have some things further to say concerning contingencies that may arise bringing them home to writer and reader alike. Who knows that either writer or reader may not soon have to become a subject of an operation requiring an endurance of pain, or an anaesthetic?

Since writing said account I have received a letter from Dr. W. A. Heckard, of Indianapolis, Indiana, in which he says:

"Since I have been home (from Chicago Odontographic Clinic), there have been two deaths from chloroform, both for minor opera-

tions, and patients in perfect health so far as could be learned by the operators in charge. Oh! I do wish I could get a chance to appear before them some time, and for the good of humanity show them what we know to be true. But these people of ours are so slow to understand."

His letter is a personal one and I am not at liberty to quote more from its interesting pages, wherein he voices the lament that breaks from the thoughtfully educated in anaesthesia.

Alas! somebody HAS blundered! How sad have been these blunders I do not expect my readers to realize as fully as I; knowing many, however, as I do, I am assured that sincere regret will cause them to pause and reflect, and inquire mentally for a remedy. They will doubtless recognize what is the fact, that five of the six deaths occurred in the early stage of the anaesthesia; and that the sixth death, that of Dr. —, resulted from prolonged hyper-anaesthesia and consequent shock incident to the operation.

Were I personally present with you I should not expect you to manifest much surprise at the news, if it were such, or to exhibit any special emotion. In fact, with my experience, I should be quite astonished if you did. And it is this stolid impassivity that causes me one of the keenest regrets of my professional life. It is doubtless the same that caused Dr. Heckard to exclaim: "*But these people of ours are so slow to understand.*"

Suppose that the two men first spoken of, instead of being unknown to us even by name, had been Truman W. Brophy, dean of the Chicago Dental College, and G. Vardman Black, dean of Northwestern University Dental School. And suppose that, instead of having been Dr. —, with brain sarcoma, it had been Dr. Barrett, of Buffalo—would you be as impassive at news of those deaths?"

Suppose, further, that the woman who was given gas for tooth-extraction had been the beautiful and accomplished wife of Dr. E. A. Royce, and suppose, still again, that the two patients Dr. Heckard speaks of had been the beautiful daughters of C. N. Johnson—would you receive the recital of their needless deaths with the same equanimity? I say needless deaths; I weigh my words. I mean exactly what I say. Dr. —, with brain disease, owing to our present lack of knowledge, was doomed to near-by death. But he should not have been killed by the anaesthetic. It would have been all the same if the surgeon had found a small benign tumor pressing

upon the brain, and had enucleated it; the patient could not have survived the *hyper-anaesthesia*. That may not have been a case of *Malum prohibitum*, and the other deaths may not have been; but that they were *Malum in se* and *Malo modo*, I do not hesitate to say. Neither should they have died as, and when, they did.

In my next I will give some reasons for my assertions—my *Dictum de dicto*.

(To be continued.)



These two pages are reproduced from the "Anatomy of Human Bodies"
by William Cowper, London; printed in 1737. Reduced to one-fourth size.



THE NINETY-SECOND TABLE.

Fig. 1.

SHEWS the Fore-part of the Skull, in which Part of the Proper Bones of the Skull already Describ'd, and divers of those of the Upper Jaw and the Bones of the Lower Jaw, are well Express'd.

A, B, C. The First Bone of the Upper Jaw, constituting the Inferior Part of the Orbit of the Eye, and Part of its Lesser *Cumis*, together with Part of the *Os Jugale* and Cheek; **B**, That Part of it which Composes Part of the *Os Jugale*.

D. The Second Bone of the Upper Jaw, which may be call'd *Os Leptum*, because the *Deltus* Arising from the Two *Pontis Lachrymatis*, passes thro' it into the *Foramina* of the Nofrill on that Side, together with a Branch of the Fourth Pair of Nerves, and some Remarkable Blood-Vessels.

Atomomis, digested in their Descriptions and Number of the Bones of the Upper Jaw, *Galen in Libet, lib. rectione XI, De Partum Op. IX, in Introductio in Aetatio Galeno Adversus XII.* to which latter *Papinius Subscribes*, but *Columbus* mentions it, and at the same time in his Description omits the Third Pair of *Pontis* and Others, and instead thereof adds Two others, or another Pair call'd *Os Spinae* comp'd within the Nofrills. We can't but agree with *Hippocrat.* Description being so very clear and intelligible by the Appearance of m'st, if not all Skulls; nor can we find any Relation to what *Columbus* has add'd, so that the Bone of the Upper Jaw is XV in Number; *sic*, the *VI.* Pair of *Pontis*, the Two *Os Sphenoidis* and *Squama Narum* of *Columbus*, by him call'd *Vomer*, from the likeness it has to a Plow-Share or Coulter.

The Third Bone of the Upper Jaw is scarcely Express'd in this Figure, as in that of *Fig. 89.* *Fig. 1.* by reason of the Foreshorten'd Side (as Painters Term it) it's in this Position of the *Cranium*: This Third Bone of the Upper Jaw is commonly of a Quadrangular Figure, and very Thin, plac'd within the Orbit: the precise Place of its Situation is Forwards, adjoining to the Second Bone of the Upper Jaw, or *Os Lachrymatis*; Backwards it sometimes Touches the *Os Coniforme* at One Angle only; Above it's Sutur'd with the *Os Frontis*; Below with the Fourth Bone of the Upper Jaw.

E. The Fourth Bone of the Upper Jaw, which is the Largest of all the Bones of the Jaw, Composing the Lower-part of the Orbit, the rear-part of the Palate, and containing all the Upper Teeth in its Socket; its Upper-part is join'd to the Lower-part of the Forehead-bone, or *Os Frontis*; the First Pair of the Upper Jaw; Backward to the Third, and *Os Coniforme*; and Lally to the Fellow of the *Os Frontis* of the Eye; a Branch of this Exprest immediately under the Skin of the Eye serves to Transfus a Branch of the Fifth Pair of Nerves to the Muscles of the Lips, *etc.* The Second, Third, Fourth and Fifth *Foramina*, are in Common with it and other Bones; of these, the Fifth is Compos'd at its Conjunction with the *Os Lachrymatis*; (**D**) the Second with the *Os Coniforme*; (**C**) the Third at its Conjunction with its Partner near the *Dentes Incisivi* *Fig. 1, G.* and the Fourth at its Conjunction with the *Os Palati* (*Ibid.* *Fig. 1, h.*) Backwards: It has a Large Cavity which Opens into the *Foramen* of the Nose; the Lower-part of which Aperture the *Os Sphenoidis*, mention'd by *Realdis Columbus*, is plac'd: This Cavity is call'd *Atrium Maxillae Superioris*, by some call'd *Atrium Highmorei*, for what reason I know not, since 't was Describ'd long before *Dr. Highmore*, as appears by *Vesalius*, *Columbus*, *Babinius*, *etc.*

F. The Fifth Bone of the Upper Jaw, which with its Partner Composes the Upper Bony Part of the Nose, its Sutures or Conjunctions with the other Neighbouring Bones and Figure are *l'e* to well Express'd, that it needs no other Description.

G. The *Squama Narum* whole Bony Fore-part here Express'd, is Compos'd partly by the *Os Coniforme*, and partly by a Procels of the Fourth Bone of the Upper Jaw.

H. The Sixth Bone of the Upper Jaw, or *Os Sphenoidis*; this and its Partner are mention'd by *Columbus*, and call'd *Spongiosa*. These we have consider'd as being the Bones of the Human Skulls, as well as in those of Quadrupedes, in which latter, these *Os Sphenoidis* have a very Remarkable Disposition; they being Broad, Thin, Bony Bodies, Roll'd over, & much like a Piece of Bone. *Express Tab. 65. Fig. 2. D.D.* Nor is this Involved Disposition of these Bones only in Quadrupedes, but in Humane Bodies also it's to Dispos'd (the 't not so much Turn'd in) and Cover'd every where with the Pituitary Membrane, which Invels the Infus of the *Foramina Narum*, on which the Branches of the Olfactory Nerves are Expanded.

I. A Chink or *Foramen* Compos'd by the *Os Coniforme*, together with the Fourth Bone, and Part of the First Bone of the Upper Jaw; commonly call'd the Fourth *Foramen* of the *Os Sphenoidis*, or the Third *Foramen* of the Fourth Bone of the Upper Jaw.

K. The *Os Frontis*.

L. Part of the Left *Bregma*.

M. The *Os Squamo-narum* or *Temporale*.

Fig. 2.

The Inferior Surface of the *Basis* of the Skull.

A. The *Os Occiput*.

B. Part of the *Bregma*.

C. That Part of the *Os Temporale* call'd *Procels Mammillaris*.

D. The *Os Jugale* Compos'd of a Procels of the *Os Temporale* and First Bone of the Upper Jaw.

E. The Four *Dentes Incisivi*.

F. *Inferior.* The Light *Dentes Molares*, Four on each Side.

The inferior of Two *Dentes Conici*.

G. The Fourth *Foramen* of the Fourth Bone of the Upper Jaw.

G, F. The Lower-part of the Fourth Bone of the Upper Jaw next the Palate, by some therefore call'd *Os Palati*.

H. The Seventh Pair of Bones of the Upper Jaw, call'd *Os Palati*, their Bones are Perforated on each Side (*b* h) near the *Dentes Molares*; which Perforation is in Common with the Fourth Bone of the Upper Jaw, and is call'd the Fifth Perforation of that Bone, as above mention'd.

These Seven Pairs of the Upper Jaw make Fourteen on each Side, to which *Realdis Columbus* adds another which has no Partner, and is reckon'd the Fifteenth Bone of the Upper Jaw.

I. The Fifteenth Bone of the Upper Jaw, by *Columbus* liken'd to a Coulter or Plow-Share, making the Back-part of the *Squama Narum*.

K. The *Procels Pterygoidei* or *Aliformis*, reckon'd the First of the External Procels of the *Os Sphenoidis*.

*The *Maxilla Pterygoidei Interna**, Arises from the Internal Part of the *Procels* of this Procels; *Vid. App. Fig. 8. G.*

L. The Lower-part of the *Procels*, or *Appendix Sphenoidis*; its Upper-part being Broken off on both Sides in this Figure.

M. The Margin of the *Mucosa Auditoria* in the *Os Temporale*, of the Left Side.

N. The *Sinus* of the *Os Pterygum* or *Temporale*, which receives the Head of the Long Procels of the Lower Jaw.

O. Two Procels of the *Os Occiput* Articulated with the First *Vertebra* of the Neck.

P. The Anterior *Appendix* or Procels of the *Os Occiput*; by *Vesalius* in his *Anatomie* on his Figures of Chap. XIII. Erroneously call'd *Os Sphenoidis*.

Q. The *Procels Mammillaris* or *Mastoides* of the *Os Temporale*, on the Left Side.

R.R. The Great *Foramen* of the *Os Occiput*, by which the *Middle Otic* passes out of the Skull.

S. The Apertures and *Sinus* of the Bones of the *Occiput*, made by the Inusions of the Muscles Moving the Head.

TT. The Internal Parts of the First Bones of the Upper Jaw.

VV. The Fourth *Foramen* of the *Os Coniforme*; *Vid. Fig. 1.*

W. Part of the *Os Coniforme* next the Aliform Procels.

XX. The Fifth *Foramen* of the *Os Coniforme*, Compos'd at the Meeting of that Bone with the *Os Pterygum*, and Fore-part of the Occipital-bone on both Sides.

Y. The Sixth *Foramen* of the *Os Coniforme* at the Root of the *Procels Pterygoides*, by which a Branch of the Fifth Pair of Nerves passes out of the Skull.

ZZ. The *Foramina* of the *Os Temporale*, by which the Carotid Arteries first Enter the *Basis* of the Skull.

Fig. 3.

The Inferior Part of the Lower Jaw.

a. The Internal Part of the Lower Jaw, whence the *Musculus Styloglossus* is Aris'd.

b. A Large *Foramen* in the Internal Part of the Lower Jaw, by which the Blood-Vessels and a Branch of the Fifth Pair of Nerves pass to the Teeth; *Fig. 1.* The External *Foramen* of this Bone, by which the Branches of those Vessels pass out of the Bone again to the Muscles of the Lips.

c. A Fore-shorten'd Appearance of the *Procels Cornea* of the Lower Jaw; *Fig. 1.* call'd the Short Procels.

D.E. The Head of the Long Procels of the Lower Jaw, call'd *Cauda*, which is Articulated with the *Os Temporale* by the Median of a Moving Cartilage; *Vid. App. Fig. 8. T. S.*

F. The *Cervix* or Neck of the Long Procels of the Lower Jaw.

Fig. 4.

The Teeth of the Upper and Lower Jaw of one Side only, when taken out of their *Abroci* or Sockets.

A, &c. The *Dentes Incisivi*;

B, &c. The *Canini*;

C, &c. The *Molares*.

Fig. 5.

The Right Side of the Lower Jaw in which the *Abroci* or Sockets, after the Extraction of the Teeth, are Represented.

A. The *Procels Cornea*, to which the Temporal Muscle is fixt.

B. The *Procels Cauda*.

C, C. The *Abroci* or Sockets of the Teeth.

Fig. 6.

A, &c. Divers Teeth Broken and Divided Variously, to shew their Internal Cavities or *Sinus*.

Fig. 7.

One of the Grinding Teeth in maner Broken to Exhibit its Internal Structure, figur'd much Bigger than the Life.

A. The External Stony Part.

B. The Stony Srix of the Tooth Divis'd of its Stony *Correa*.

C. The Internal Bony Part of the Tooth becoming more Porous, as it Approaches its Middle Cavity.

D. The Middle Cavity or Hollow of the Tooth, Cover'd with a Membrane on which the Blood-Vessels and Nerves of the Tooth are Distribut'd, by which the Tooth derives the Matter which it Germanate and repair that part it sustains by frequent Use on its Cortical or Stony Part: Thus when one Tooth is wanting in either Jaw, the Opposite tooth Grows Longer for want of its Resistance in Mastication: When this Internal Membrane within the Cavity of the Tooth is Expel'd thro' the Breaking away of the Upper-part of the Tooth, it is most Exquisitely sensible to the Touch of any hard Body, or cold Liquor; and very frequently a Carnous *Fungus* will Arise from it: In these Cases the drawing out of the Tooth is necessary.

E. The External Membrane lying on that Part of the Tooth within its Socket or *Abroci*: They do not Existence of such a Membrane may be faulst discern'd; after a Tooth is drawn from a Living or lucid Dead Body, and is laid in Water some Days, this Membrane will be very Confin'd even to the Naked Eye.

F. The *Roots* of the Tooth.

G. The *Axes* of one of its Roots where the Blood-Vessels Arising from the *Pericula* of the *Abroci* or Socket, are Express'd, running into that Part of it which lies within the *Abroci*.

Fig. 8.

The Stony Parts of the Teeth of a *Fetus*, which lying within the Jaw-bones, are Cover'd with the *Periostum*, as appear'd in the Diffusion sometime since made of a Humane *Fetus*; *Vid. Tab. 101. L. L.*

A, A. The *Capula* of one of the *Dentes Incisivi*.

B, B. That of the *Canini*.

C, C. The Superior Stony Parts of the *Dentes Molares* in a *Fetus*.

Fig. 9.

The *Os Hyoides* or Bone of the Tongue, together with Two Procels of the Scutiform Cartilage.

A. The Middle Bone of the *Os Hyoides*,

B. Its Superior Part next the Tongue;

C. Its Internal Concave Part towards the *Os Hyoides*.

D. Part of the Superior Long Procels of the Scutiform Cartilage of the Left Side loofly Tied to the Extremity of the *Os Hyoides* of the same Side; that of the Right Side is not Letter'd in this Figure.

E. One of the Two Lateral Bones which Helps to Compose the *Os Hyoides*.

Fig. 10.

The *Os Hyoides* or Bone of the Tongue, together with Two Procels of the Scutiform Cartilage.

A. The Middle Bone of the *Os Hyoides*,

B. Its Superior Part next the Tongue;

C. Its Internal Concave Part towards the *Os Hyoides*.

D. Part of the Superior Long Procels of the Scutiform Cartilage of the Left Side loofly Tied to the Extremity of the *Os Hyoides* of the same Side; that of the Right Side is not Letter'd in this Figure.

E. One of the Two Lateral Bones which Helps to Compose the *Os Hyoides*.

Fig. 11.

ETHICS.

BY AMY G. BOWMAN, D. D. S., SAN FRANCISCO.

Ethics in its broadest and fullest sense is the art of living rightly and conducting ourselves in a manner that we shall in no way infringe on the rights of others.

Webster calls it the "Science of Human Duty."

It is the continued practical application, if it so please you, of the Golden Rule.

It would, I am sure, weary you beyond measure should I attempt to go back to the first records extant on this subject, for, abstruse as it is, there is no dearth of literature upon it, for it has occupied the thought of the very best of our writers of both ancient and modern times.

It was handed down from the Greeks to the Romans and copied from the Romans by us.

We find that in the fifth century, B. C., Democritus and Socrates both wrote on this subject, but they called it the "Philosophy of Conduct," and it was not till the following century that Aristotle applied to it the name "Ethics."

But we find that in all these early writings that the Greeks at least dealt only with the good of the individual concerned and not with the good of society at large.

The Romans, after the beginning of the Christian era, adopted some such thoughts on this subject, but enlarged upon it, seeking not only the good of the individual, but the good of humanity, and modern thought, and investigation has deemed this a correct basis upon which society may attain its rightful position, and with regard to the effect this has had on our own profession we find that as far back as 1847 we borrowed a code of ethics from the medical profession and that code was afterwards adopted by the American Dental Association and has since been fostered by all dental societies.

Dental ethics, then I take it, is that branch of ethics which bears on the conduct of members of our profession, not only to one another as fellow practitioners, but to other people as well, as we shall see later.

Surely the ethics bearing on the relationship between us as fellow-workers ought to be best understood by us. There should be naught but harmony here—for in union there is strength, and when we shall

attain dignity enough to feel this and shall be so jealous and careful of each other's honor professionally, there will scarce be need of a written code, perhaps.

The trouble is we are all very human, therefore can hardly hope to reach such a high standard; still we can do much towards it. But we need not flatter ourselves or be so self-righteous as to suppose that because we are not guilty of some of the things that we disapprove of and that hurt our professional pride that we are free from all error, for I would like to suggest that it is not only the man who hangs out a gilded tooth or fills his windows with an electrical display or perchance has a hideous assortment of teeth, etc., in a show case at his stairway, or who advertises his scale of charges for work, etc., who is unethical.

That is only his way of getting a practice. Some others use the churches and lodges for exactly the same purpose, and what about cards in hotel registers and society papers? It seems to me that this is only a more refined and fashionable way of doing the same thing. Let us sweep our own door yards before going any farther afield and criticising our neighbor. Do not misunderstand me, I beg you. I have no sympathy with the "dental advertiser" in any guise. I would label him "quack" whether he be dressed in homespun or broadcloth or should he be found in a dental parlor or in fashionable chambers.

It is, I repeat, not only the quack of the dental parlor or the man who is looked upon by the public and profession at large as an illegal practitioner who infringes the code of ethics.

It is done by some members of the profession who consider themselves quite eminently respectable and who would be highly incensed if charged with the crime.

Take a walk through our own city, to say nothing of other towns, and if you are observant you will see many who so offend.

Glance at that sign, "John James, D.D.S."

Well, that's all right, you say. Yes, but look again, read further. What follows? "John James, D.D.S.; Gas Given."

What seemed at first an innocent name sign now assumes a different aspect, and our cousin from the country, reading this, says to his wife or his chum, "Let's go in here. Doc Smith ain't got any gas, and I'd like to see what the gol-durned stuff looks like."

So with all his D.D.S., his pride in being a legal practitioner, he

has descended to one of the very things that he accuses the dental parlor proprietor of.

I tell you that in reality he is twin brother to him and should be so regarded, for has he not implied that he has something more than Smith or Jones and called the attention of the passerby to it?

What would we think of the physician who would write his name, "John Brown, M.D.; chloroform administered?"

But don't end your stroll yet. Please notice how many relations John James has. Why, they are quite numerous. A very near one is "Painless Extraction," and he in turn is first cousin to "Seamless Crowns" and "Crown and Bridge Work a Specialty." These all border on the ragged edge, and are not nearly as manly as their more distant relative, "African Dental Parlor."

ETHICS OF THE DENTIST REGARDING HIS OFFICE AND HIS CONDUCT TO PATIENTS.

I need not say that I am sure that the dentist's office should be the best within his means. It need not be lavishly or expensively furnished, but it must be scrupulously clean and neat always, and as pleasantly situated at possible, while he himself should be a gentleman in the truest meaning of the word, so that in his relations with his patients he will bring no reproach upon himself or the profession.

His manners should be courteous and kindly to the greatest degree, thus assuring the timid or nervous one, and still firm enough to gain and keep respect—especially in the case of children, for they are excellent physiognomists and also good observers, and they size up the dentist in about the same way as they do their teachers at school.

Of course all honorable practitioners will be honest with patients, and to do this he must first be honest to himself. I mean this in all sincerity, literally honest to himself. To do this he must not allow patients to waste his time, either by neglecting to keep engagements promptly, by the recitation of family or society gossip, etc.; and last but not least, must demand and receive such a fee for his services as the operation he performs is honestly worth in his estimation, otherwise he fails in his duty to himself. I would have somewhere in his workroom these words, written in letters of gold: "To thine own self be true, and it follows as the day the night, thou canst not then be false to any man."

ETHICS BETWEEN THE DENTIST AND HIS FELLOW PRACTITIONER.

We often blame physicians for not recognizing us, etc., but really I think we must look to ourselves a little for the blame, for there is not enough fraternal feeling between us as dentists. How many of us during the past year, say, have called in consultation a fellow practitioner when we have had a difficult or puzzling case? Have we not referred the case to the family physician instead, because we did not feel satisfied about it and tried to satisfy our conscience with the idea that the patient needed toning up, etc. This was perhaps wise, nay, it might have been the right thing to do in that particular case, but have there not been times when you would have liked the opinion and advice of another, perhaps older, practitioner, upon a case? I think if you are honest you will answer in the affirmative. And what reasons can you give for not doing so? If you are too timid to tell, I'll engage to answer for you. Pride! Fear of the patient losing confidence in your ability or perhaps fear of losing the patient. None of these reasons are really logical. Your patients will only honor you the more for your unselfish desire to truly benefit and for the interest you manifest in them, and if you cannot so impress them then truly you deserve to lose them.

Physicians do it constantly. Why not the dentist? Simply because we have not accustomed ourselves to it and hate to get out of the little ruts of our predecessors. But progression must be our watchword and no petty jealousy or fear must be allowed to creep in. We must be willing to believe that no one individual can possibly know it all. How presumptuous we have been, always to suppose so. I say all hail the time when dentistry shall have its specialties and those specialties recognized as such even as medicine has. Whatever would we think to-day of the physician who never called counsel? I'm afraid we would class him as a back number, or look upon him with suspicion, and what a frightfully lonesome man he would be professionally—and deservedly so.

Under this heading comes treatment of fellow dentists. Let us see to it that we are careful of speech when a patient comes from a brother, and if possible—and it most always is—say something nice of the work done and anyway not allow a garrulous patient to say things derogatory about their former dentist, for rest assured they will do the same thing by you some time. This, of course, does not refer to the duty of honorable practitioners with regard to advising

patients against the dental charlatan who advertises his wares upon the "25c and up" plan and who takes good care that he always gets the "up" price. Strange, isn't it, that a man who talks so much about "up" should really be "down." Yes, down beneath the contempt of his fellows, for he has trafficked his honor in the dust; for the goods he has are shop-worn and ear-marked, and no wonder he resorts to bargain-counter methods, confident that there are always gullible ones who dearly love to think they are getting something for nothing.

We might write duty here in capital letters, I think.

ETHICS BETWEEN THE DENTIST AND PHYSICIAN.

I think that here we have a wide field for improvement. Certain it is that there is discord here—just which is to blame the most is a very vexed question—but it is high time for us to take a decided stand for our rights, and be recognized as professional men and women and not as mechanics only, and in order to do this we must surely be so well equipped mentally as well as manually, for our work, and have our armor so impregnable that there shall be no room for cavil on the part of members of our sister profession.

How shall we attain this? There can be but one way, it seems to me. We must be sure of ourselves. Fortunate indeed is the individual whose early education has been such that the later professional training can fall on receptive soil and so round out the character to such an extent that he may enter on his professional duties with a strength and sureness of footing that will command the respect not only of his confreres but of his medical brothers as well.

Personally I have much faith that it will be so before many years. Our reputable colleges are raising the course of study each year and soon the entrance examination will be of such a standard that to be a matriculate will be almost on a par with being a graduate, and then the illiterate dentist will be as much a back number as the old turnkey used by our ancestors in extracting.

We sometimes hear our colleges spoken of derisively with regard to this subject, but let us reserve our criticism. Evolution may be slower than the age of miracles, but it is sure; and it takes time and infinite patience and heart-throbs—aye, and heart-breaks—to accomplish these things. Think of the noble army of men in the United States alone who have given up their time and the best years of their lives

to put our colleges on the footing of to-day. All honor to such men. May we not only follow in their footsteps but have the grace to tread reverently and see to it that we abuse not the sacred trust handed down to us, but rather strive to live and work so truly in our chosen task that we too may leave our imprint for good on succeeding generations.

And now, in summing up, let me say that after all it would seem that written codes of ethics are only necessary because some men transgress the law of right and that despite all the codes of dental ethics ever formed those men will follow their own course if their inclinations so lead them. And yet this is not quite true, either, because such a code does help some who are too weak to stand alone, and much as we may deplore the weakness, let us not take away the support. Rather let us keep our sarcasm and our contempt for those in the profession who just barely keep within the boundary line and who do so because they are afraid and ashamed to do otherwise; they are on the same plane as the man who would commit a crime but for the fear of the law. Yet let us not forget also that once the greatest of all teachers said: "Let him who is without sin cast the first stone."

It may seem presumptuous of me to give utterance to some of these thoughts, considering my few years of professional life, but they are honestly spoken, and if I have offended or been remiss in any way I pray you out of your abundant charity for a fellow worker to pardon me.—*Proceedings California State Dental Association.*



THE STATE DENTAL SOCIETY MEETING.

The State Society meeting for 1903 is a thing of the past. It brought together, as usual, several hundred dentists from all parts of the state, with, *as usual*, a large contingent from Chicago. Aside from those who went, some early and some late, a full special car-load went from Chicago over the Alton road, reaching Bloomington the evening before the date set for opening of the meeting. Pleasant weather prevailed throughout the three days' session, but the thermometer ran up a few points more than was agreeable part of the time.

The assembly hall of the Illinois Hotel was the place of all meetings, except clinics, which were held in Armory Hall, one block away.

The first morning session opened Tuesday about 9:30 with prayer by the Rev. J. H. Gilliland, who was followed by the Hon. J. A. Sterling in an address of welcome. Response to the welcome was made by Dr. T. W. Pritchett, a venerable member of the State Society.

The address of the president of the society, Dr. A. H. Peck, glistened with many good things and had a ring to it that met with the very hearty approval of the members.

The committee on dental art and invention, Dr. L. S. Tenney, was not present, but sent a report, which was read by the secretary, and the new appliances and inventions were exhibited in a showcase at Armory Hall.

“Porcelain Inlay work, as Viewed from the Standpoint of the Country Dentist,” was discussed in a paper by Dr. E. H. Allen, Freeport, Ill. Admitting that porcelain inlays had come to stay and that they represented the very highest phase of dental art and artistic skill and manipulative ability, he felt that it would be some time, owing to many conditions hard to overcome, before country dentists could indulge in that class of work, mentioning that the best and the most artistic was not so much sought after by the patrons of the country dentist as something good, solid and substantial and low in price, though offending the tastes, possibly, of a more aesthetic eye, and porcelain could never be cheaply made. However, many country dentists were doing good work at it.

The paper provoked a good deal of earnest discussion, not so much of the paper as the subject all along the line of porcelain inlays, their adaptability, durability, ability to preserve, aesthetic

qualities and the great reduction of pain and strain as concerns the patient, not to mention some relief to the dentist. Optimistic ideas and sentiments predominated, but pessimism held aloft the hand of conservatism and warning. No paper was so enthusiastically discussed simply because it was *porcelain* and the only paper that gave an opening on porcelain inlays.

Dr. T. H. Barrett read a paper on "The Relationship of the General Practitioner to Othodontia."

Dr. Prothero gave a paper on "The Expansion of Plaster of Paris," showing how our failures in fitting artificial dentures was due to both the changes in impressions and models. Dr. Prothero is carrying a scientific investigation into plaster expansion with the hope of finding a way to overcome the trouble due to expansion.

Dr. C. S. Case presented a paper on "Artificial Velum Obturators," extensively illustrated by charts. A new feature is the invention of an artificial palate that differs from the usual soft rubber ones in use by having a thickened and rounded border, instead of thin, and also in producing one in thin, flexible metal with the same thickened border of rubber. Along this line of work Dr. Case seems to be in the lead of all others.

A paper on the "Administration of Narcotile as a General Anesthetic," presented by Dr. F. A. Weld, created a good deal of interest. A clinic with narcotile was given later.

"Preservation of the Deciduous Teeth" was a subject well handled in a paper by Dr. A. M. Harrison. This being an all-around subject of interest, every one having that sort of trouble in hand in practice, it was well threshed over, and if some of the children knew how they were mentally threshed for howling when the good dentist wants to preserve their teeth they would not believe much in that smile that never comes off that the good dentist wears. One dentist who was due at the meeting but failed to be on hand would have told, if he had been there, how he finds excellent persuaders in "Malted Milk Tablets" and sample tooth powders, with which he can be liberal, if the child is real good, at the expense of the producer.

Dr. Geo. W. Cook wound up the program of papers with "A Treatise on Bacteriology," with an exhibition of tubes, beakers, jars and glass covered dishes in which the culture of germs of various kinds was going on. He told the society where some of those per-

sistent bad breaths come from, even in mouths that in a general way are pretty well cared for.

Special effort had been made to get interesting clinics, and they were so. The clinic room, Armory Hall, was unusually good, large and well lighted. Dr. C. P. Pruyn as supervisor of clinics could not well be outdone. He is one of the men that does things. Facilities in the way of good operating chairs and other things needful were unexcelled. In these things Dr. C. J. Sowle had also a busy hand.

The clinics were held Tuesday afternoon and Thursday forenoon. W. T. Reeves made and set several porcelain inlays.

Sidney Knowles and R. E. Cockrell gave demonstrations of porcelain inlays by the swaging process of forming matrix. G. W. Swartz gave clinic on porcelain inlays and Davis crown. D. H. Baldwin, porcelain inlay.

Lester F. Bryant made a porcelain inlay restoring the contour and angle of an anterior tooth.

J. M. Barcus made and set a gold inlay.

J. A. Curry made a Davis banded crown.

Hugo G. Fisher and Hugo Franz put in gold fillings.

O. M. Daymude put in a platinum and gold filling, also gave clinic on pressure anesthesia.

J. H. Prothero exhibited an instrument and gave demonstrations of the expansibility of plaster, points of expansion noted on a scale.

C. W. Case exhibited mechanical appliances used in orthodontia and models of mouths with regulating appliances attached; also models of congenital fissures and obturators fitted to same.

Elgin MaWhinney exhibited drugs of value to dentists and freely dispensed information as to how, when and where to use them.

Geo. W. Cook conducted a bacteriological laboratory.

F. A. Weld gave a demonstration of narcotile administration.

T. W. Prichett demonstrated the practicability of the Bonwill articulator.

B. J. Cigrand demonstrated the mandibular movement of an articulator.

A. S. Waltz exhibited various things—potpourri.

R. N. Lawrence exhibited, with models, a method of lining rubber plates with a semi-soft rubber.

Arthur D. Black showed Dr. Gilmer's method of wiring the teeth in fractures of lower jaw.

W. V. B. Ames gave table clinic on cements, their peculiarities and how to mix.

Ashley M. Hewett and Jno. C. Smith gave a most interesting clinic in a variety of things along the line of electricity, both direct and alternating currents, and in rheostats and furnaces.

H. J. Combs showed a novel method of mounting a Davis crown for crown and bridge work.

Claud B. Warner gave a very interesting clinic on pressure anesthesia, by use of the Tuller pressure cataphoric instrument. A colored man was the patient and the best evidence that there was no pain in the operation was the fact that he fell asleep while the operation was going on and only awoke when Dr. Warner had removed the pulp and put in dressing and was ready to dismiss him.

R. B. Tuller exhibited an instrument devised by him for obtunding sensitive dentin in excavating for fillings or for thoroughly anesthetizing an exposed pulp for immediate extirpation.

P. A. Pyper put in a gold filling with S. S. White mechanical mallet.

W. E. Mabee put in a contour gold filling, using post for anchorage.

H. O. Skinner gave a demonstration of prolonged nitrous oxide gas anesthesia.

G. W. Dittmar demonstrated "extension for prevention" cavity. F. W. Gethro demonstrated use of soft gold in cervical third of a bicuspid proximal cavity.

F. W. Parker demonstrated use of finishing instruments for finishing gold fillings.

H. W. McMillan exhibited a case of mal-occlusion.

S. J. Wright showed the use of vulcanisable gutta-percha for base plates.

C. T. Gramm filled roots with gutta-percha and gold wire.

R. W. Parker gave a clinic on matrices, their construction and retention.

A. E. Boyce demonstrated the use of vulcanizable gutta-percha.

H. O. Browning demonstrated the use of celluloid matrices.

C. N. Thompson put in a gold inlay.

R. C. Brophy gave a clinic on baking porcelain in a gasoline furnace, melting 25 per cent platinum solder and die-making.

F. W. Keel gave a demonstration on use of non-cohesive gold.

C. B. Rohland gave clinic on vulcanizable gutta-percha in preliminaries of making rubber plate.

The attendance was in the neighborhood of 400. All clinics were well attended.

As anticipated, a good deal of interest was centered in the dental bill which had passed both houses and was in the governor's hands for approval. A committee was sent to Springfield to see Governor Yates, but that gentleman evidently had his mind all made up beforehand, so the visit was in vain and the best dental bill ever framed for Illinois went to the wall, and after all the effort that was made to get it through the legislature.

But when Senator A. C. Clark and Assemblyman Bulwer, champions of the bill in the legislature, appeared in the meeting (by invitation of the Illinois State Dental Society), they were greeted with a most cordial welcome, and both made speeches that were appreciated.

The usual amount of good work was done that goes to advance dental science and make history.

On Tuesday evening after the dental meeting was over an entertainment provided by the dentists of Bloomington was given. It consisted of quartette of male voices, songs with guitar accompaniment by a beautiful young lady with a fine voice, and several good recitations. It was very much enjoyed.

Dr. F. H. McIntosh, Bloomington, Ill., was elected president, and Dr. C. C. Corbett, Edwardsville, was elected vice-president. Dr. H. J. Goslee, Chicago, was the choice for secretary, succeeding himself, as did C. N. Johnson, treasurer, and J. T. Cummins, librarian.



CLARK DENTAL BILL DEAD.

A committee of dentists, headed by Senator Clark, called upon Governor Yates May 14 to urge him to sign the bill providing for the creation of a state dental board. The dentists came to Springfield from the annual meeting of the State Dental Society, which was in session in Bloomington. They were disappointed after seeing the governor, who made the following statement to them:

"I cannot and will not sign the dental bill."

Further discussing the measure the governor said that two years ago when he came into office he found himself hampered with a number of laws providing for state boards in which it is stated that the members thereof must be appointed upon recommendations of societies. As an illustration he cited the state board of pharmacy, the members of which had been appointed upon the recommendation of the Illinois Pharmaceutical Association. Concerning this board he said that it was the only one in the state, the operation of which had been tinctured with scandal in the matter of funds.

He referred to the late agent of the board in Chicago, who has been indicted for embezzlement, and said that up to the time the scandal was made public he did not know that such an officer was in existence, that the agent had been appointed without consultation with him and that he knew absolutely nothing about him. He thought that had the executive been free to appoint the members of the board, without regard to the nominations of the Illinois Pharmaceutical Association, although he said the members were honorable and upright gentlemen, he would have been consulted more freely with regard to the appointments. He stated that it would be his policy to disapprove of all bills for the creation of new boards which did not give him full power to make appointments without regard to the recommendations of any society. The governor concluded his ultimatum by saying that he was very glad that his teeth had all been fixed up six months ago. The bill was vetoed May 16.

WHERE PORCELAIN IS INDICATED.

For the young, in whose mouths gold fillings fail faster than cement fillings wash out, and where cement dissolves out so fast as

to be dangerous, you will come very near doing permanent work with porcelain.

For the aged, whose strength will not permit the long sitting necessary for the insertion of a gold filling, you can do permanent work with porcelain, because you can divide the work between two or three sittings.

For those bordering on nervous prostration and those high-strung nervous temperaments, for whom it is a physical impossibility to prepare a cavity, even for a cement filling, to say nothing of gold, you can do permanent work with porcelain.

For those refined, sensitive natures, to whom the display of gold in the front of the mouth is an ever-conscious annoyance, you can confer a lasting benefit by the use of porcelain and restore teeth to a condition so that persons at close conversational range would not know there are any fillings there.

In teeth that are loose from pyorrhea you can do permanent work with porcelain, whereas you could not pack gold either by hand pressure of mallet and would have to resort to amalgam or cement.

The other condition, which is by far the most important and which proves a quality that has not been credited to porcelain under its proper classification and brings out the first point I want to make, are found in the following, in which porcelain only is indicated: Extensive cavities where decay has encroached so close upon the pulp that death of pulp would be almost sure to follow if filled with a metallic or cement filling, you can fill with porcelain with almost absolute security that the pulp will remain alive. Cavities in the buccal surfaces of molars and bicuspids at the gum margin that remain sensitive to anything hot or cold taken into the mouth, and cavities on the labial surfaces of the anterior teeth that are sensitive to the drawing in of a cold breath, when filled with gold become perfectly normal when the gold is replaced with a porcelain inlay.

Accidents to the young, that result in the breaking off of a large portion of an anterior tooth, where it is desirable to retain the pulp alive on account of the incomplete development of the root, can be restored to full contour and usefulness with a porcelain tip, and the pulp will remain alive.

In these and other similar cases nature revolts at the introduction of any metallic or plastic material for the replacing of the lost

tissue, but is perfectly resigned to the introduction of porcelain in the form of inlay or filling and resumes its normal functions and goes on its way rejoicing, and your patient does also.

DR. W. T. REEVES, *Review*.

METHOD IN INLAY WORK.

After platinum foil is burnished into the cavity, take a piece of gutta-percha a trifle larger than space in cavity, soften and pack into cup, the excess flowing out and over margins. This can be burnished against cavity margins with no danger of tearing platinum margins. As soon as gutta-percha is hard the platinum can be removed without danger of springing. Invest in any standard investment and after the investment has set, the gutta-percha can be removed by the use of hot air. If the platinum at the bottom of the cavity has been torn, no harm is done, as the gutta-percha fills out the cavity wall, and the investment makes the outline for lost platinum over which any of the high fusing procelains will flow and bake in form. Since adapting this method I have not had one case of springing or warping, and have had perfect adaptation of both filling and margin.—N. L. BURKE *in Review*.

WHAT A DENTIST SHOULD NOT DO.

He should never approach a patient with unwashed hands, unclean nails or soiled linen.

He should never approach a patient without a clean napkin in his left hand and a mouth mirror in the right.

He should never put his finger in a patient's mouth when an instrument or mirror will do as well.

He should never undertake the operation of filling until all salivary calculus has been removed, the teeth thoroughly cleansed and the gums made healthy.

He should never apply the rubber dam to a single tooth in preparing or inserting a filling when it is possible to include the adjacent teeth.

He should never attempt to make arsenical applications in inaccessible cavities without having first applied the rubber dam.

He should never apply arsenious acid to a congested pulp.

He should never attempt the treatment of pulpless teeth until he has thoroughly cleansed the carious cavity.

He should never hermetically seal a pulpless tooth when putrescent pulp tissue remains in the canals or where gases from the decomposition of the pulp are suspected.

He should never attempt the treatment of pulp canals without the rubber dam upon the tooth.

He should never leave caries in any part of a cavity, even though its removal would result in the exposure of the pulp.

He should never attempt to cap pulps which have been exposed for any great period of time and have been the seat of pain.

He should never use powerful drugs carelessly.

He should never deceive his patients or in any way take advantage of their ignorance.

He should never forget that the poor and needy are entitled to the same courteous consideration which is shown the rich and influential.

He should never use tobacco until his day's work is done.

He should never forget that the dentist is expected to be a gentleman.—Dr. E. T. Darby in *Penn Dental Journal*.

A PATHETIC APPEAL.

There are many pathetic appeals for help in the daily mail received at the Treasury Department, Washington, D. C., but a letter received April 29 from a little girl brought tears to the eyes of the old clerk whose duty it was to open and read it. It was as follows:

“Dear Mr. Treasurer: Inclosed you will find a very old \$1 bill which my papa gave me when he died. It was the first he ever made when he first went into the dental business. He told me to keep it until I got hard up and needed it.

“Papa has been dead two years. I need it very much now. I

took it to the bank and they said it was too old, but papa once told me all United States money could be exchanged at Washington. Papa was all through the treasury about four years ago with mamma. Maybe you met papa—he was a thirty-third degree Mason.

“We had lots of money then, but papa was sick two years, and Artie was sick two years, and it took nearly all our money. So now I must send this to you to exchange for a new dollar bill, as I need it. Poor papa would feel so bad if he knew we were in need of that dollar. It is not too old for you to exchange, is it? Now good-bye, from Little _____. ”

A new bill was sent in exchange, and there was a hint that something else went with it.

TREATMENT OF RECEDING GUMS.

In cases of receding gums apply glycerite of tannin (made by dissolving one ounce of tannic acid in four ounces of glycerine by gentle heat) to spongy or debilitated gums as a tonic astringent lotion. It condenses soft gums and re-establishes the nutritive functions.—*Register*.

ABANDONED ADRENALIN CHLORIDE AS A HEMOSTATIC.

I have used Adrenalin chloride and I have given up its use, as I use other remedies that I consider more effective and cost less. The best things I have found yet for hemorrhage after extraction, are Fletcher's carbolized resin on cotton and packed into the cavity, and next to this, burnt alum on cotton packed into the cavity. I always remove before patient leaves the office. I never have yet had a case that these last two wouldn't control and I have had regular “bleeders,” and after they have bled twenty-four hours steadily before they came to me after having tooth out.—L. W. JORDAN in *Dental Summary*.

DENTIST GAVE BANQUET AFTER HE WAS DEAD.

When Dr. Stewart B. Palmer died at the age of eighty it was found that he had made a list of friends whom he desired to attend his funeral, and afterward to hold a banquet in his memory. His wish was carried out, and the banquet was held April 11 at the Yates House, after the funeral service.

The guests were all dentists and included the members of the State Board of Dental Examiners.

Dr. Palmer became a dentist by accident. In 1847, when he was a school teacher, he needed some teeth fixed, but knew no dentist except an amateur. The young man took out nine of Palmer's teeth. Then Palmer paid \$5 for a treatise on dentistry.

After seven months of study and experimenting he produced a fine silver plate, containing nine teeth, for his own use. His friends asked him to do similar work for them, and he gave up school teaching for dentistry.

AMERICANS SUPERIOR.

At the annual meeting of the Royal Dental Hospital, London, it was reported that the number of patients operated on in 1902 was 85,284, an increase of 15,244 over the preceding year. Here again American supremacy was admitted, and the confession made that in England, only twenty years ago, "dentistry meant extraction." There is said to be an increase in dental decay among the poor of London, and while in the army the importance of the preservation of the teeth is practically recognized, the matter has not yet been adequately taken up by the school authorities.

The number of dentists in this country does not tend to increase, notwithstanding the constant increase of population. The American practitioner is by no means unknown on this side of the water, but here would seem to be a field that clamors for still further invasion and conquest.

About forty-five members of the Boston and Tufts Dental Alumni Association held a dinner at the Copley Square April 8, Dr. H. H. Piper presiding. Drs. G. C. Ainsworth, W. I. Brigham, J. R. Piper, G. B. Squires and B. H. Strout spoke. A paper was read by Dr. R. R. Andrews of Cambridge, and a discussion was opened by Prof. George A. Bates of the Tufts Dental School.

POLISHING PORCELAIN.

We hear a great deal said about the necessity of fusing the surface of a porcelain inlay after it has been ground to shape in order to obtain the requisite glossy appearance, but this is wholly uncalled for. As perfect a polish may be given porcelain as can possibly be given gold or any of the metals. Grind the inlay or crown to the

proper form, then go over the surface with a sand-paper disk, to be followed by a cuttlefish disk. Then take some oxide of tin polishing putty and with wooden points known as Barker's porous polishers, as beautiful a surface may be given to porcelain as can be imparted to it by the furnace. By this method inlays may be ground at will, with the perfect assurance that a satisfactory finish may be given without fusing again.—C. F. HART *in Review*.

DEPTH OF CAVITY FOR INLAY WORK.

The principal difficulty in retaining small labial and approximal fillings is in not getting sufficient depth to the cavity. I invariably use in these small cavities on the labial surfaces the How system of inlays.—DR. CAPON *in Cosmas*.

TO REMOVE VULCANITE FROM BETWEEN THE TEETH.

Mount a stiff fine needle in a small handle or broach holder; sharpen on two sides, and you have a useful little tool.—A. E. H. LEISTER *in Texas Journal*.

BURNISHING PLATINUM.

I unhesitatingly venture the assertion that platinum can be forced (not necessarily burnished) into the deepest, well-like cavities imaginable without a single break. But admitting such a contingency, it would be no detriment to the finished work, as either Brewster's or Close's porcelain bodies will bridge over an extensive tear.—DR. J. S. BRIDGES, *Register*.

ROOT CANALS.

In all root canals the best after-results have been obtained in cases where the canals have been largely reamed to remove the ends of the fibrillæ, thus furnishing a clear, open root and lessening the amount of putrescent material. I use a five or three-sided reamer like a Talbot's reamer. My results justify me in continuing that treatment in probably sixty-five per cent of the exposures that present.—E. T. DARBY, *International Dental Journal*.

How to Observe the Baking Point of Porcelain.—By throwing the light of a mirror into the furnace the flow of porcelain can readily be detected.—C. J. Lange, *Milwaukee (Wis.) Review*.

Syringe Point.—In washing out a diseased antrum or an abscess

use a hard rubber point on the syringe, in preference to a metal point, and the patient will be free from the disagreeable shock caused by the metal point coming in contact with the soft, inflamed tissues.—R. E. Collins, Chicago, *Review*.

Relieving Pain After Extraction.—In cases of unavoidable or advisable extraction of a tooth or root, if the after-pains caused by the extracting are severe, relief may be given in a short time by thrusting a pellet of absorbent cotton dipped into chloroform well into each root socket and leaving it there for a minute or two, and then remove it. A separate pellet of cotton thus medicated should be inserted into each root socket involved. In extreme cases this may be repeated and relief is sure to result.—H. A. Cross, Chicago, *Review*.

Cement Slab.—The ideal slab on which to mix cement is a glazed tile. The ornamental tiles used around fireplace mantels are the best, and may be procured in convenient sizes from any dealer in builders' supplies for a few cents. They are perfect to mix cement on and can easily be made *absolutely clean*. Scraping to remove cement does not scratch them and thus afford lodging places for hardened cement, as it will with a glass slab, and make it impossible to have an "absolutely clean" surface.—H. B. Denton, Eveleth, Minn., *Review*.

TO REMOVE ODORS.

The odor of alcohol or of tobacco may be removed by peroxide one part to five of rose water, or by diluted listerine.—*Sur. Clinic*.

Naegeli says that headache, facial neuralgia and toothache may be relieved by elevating the larynx a minute, repeatedly.—*Sur. Clinic*.

TRIKRESOL.

Trikresol, possessing three times the disinfectant value and one-third the toxicity of carbolic acid, is the ideal for use on instruments, which it does not injure or blacken.—*Dental Hints*.

EXPOSED, INFLAMED PULPS IN DECIDUOUS TEETH.

It is often impossible to treat with ordinary methods the teeth of young children in which the pulp is exposed and inflamed. Gratifying results follow calling in the family physician to administer a

general anesthetic and thoroughly removing the pulp while the little patient is unconscious.—A. H. PECK, *Dental Review*.

Every dentist who orders teeth by mail should have a catalogue of teeth. After the size and shape have been determined select the teeth that correspond to the measurements. It is often necessary to order the incisors and canines from one mold and the bicuspids and molars from another. When writing to the dealer the dentist should give the mold number, whose catalogue used, color of teeth and whose shade guide used.—J. Q. BYRAM, *Dental Review*.

MIXING PORCELAIN.

In mixing porcelain body for inlays or crown work always use alcohol or distilled water. All hydrant water is liable to contain some mineral in solution.—*Dental Hints*.

Recently the Swiss Federal Council has determined to attach a dentist to each school, whose duty will be to examine the teeth of every pupil and attend to them if necessary.—*Dental Hints*.

GOLD PLATES VS. BRIDGES.

Fifty per cent of the people who are wearing bridges or trying to wear them would have been much better served as to appearance, comfort and usefulness had the dentist who inserted them the skill to properly adjust a gold plate.—*Review*.

TO SHARPEN INSTRUMENTS.

The dry hone made by E. A. Harrington, Waukesha, Wis., will always keep your instruments sharp with little trouble. The best barbers in this city tell us that they now find it indispensable in keeping their razors sharp.—*Med. Recorder*.

There is a popular belief in Fife that when the wife becomes pregnant the husband is more than likely to have persistent tooth-ache. In Fifeshire a persistent toothache in an unmarried man is *prima facie* evidence that he has broken the seventh commandment.—*Dental Hints*.

Bleaching Pink Rubber.—I have found that the quickest way to bleach pink rubber is to focus upon it the rays of the magnifying glass, taking care not to burn it, as this method gives you a beautifully bleached pink in about five minutes.—L. ARNDT, D. D. S., *Register*.

POWER OF NEW YORK STATE BOARD.

A dentist of New York accused of unprofessional or immoral conduct or gross ignorance and inefficiency in his professional duties may be required to appear before the board of dental examiners to answer the charges, a copy of which must be served on him. If found guilty he may be suspended for a limited period or his license may be revoked entirely.—*Dental Hints.*

SOLDERING FLUID FOR GOLD.

Boracic acid, 1 ounce; ammonia carb., 10 grs.; soda bicarb., 1 drachm; ammonia aqua, ss. ounces. Shake well before using.—*Dental Brief.*

ALUMINUM SOLDER AND FLUX.

Aluminum plate, 6 parts; zinc, 1 part; phosphor tin, 3 parts; flux: stearic acid. Useful for strengthening seamless aluminum crowns, preventing wearing through on occlusal surface.—*Dental Summary.*

VANDERBILT DENTAL EXERCISES.

The commencement exercises of the Department of Dentistry of Vanderbilt University were held in the University Chapel May 5. A large crowd of friends of the graduates attended the exercises.

The address to the graduates was delivered by Rev. H. M. Dubose, secretary of the Epworth League of the M. E. Church, South.

Rev. Dubose's last thought was that a profession is but a means of developing life into something higher and better and implored the young men not to give up at the first struggles and defeats of their early years, but to fight bravely on.

Dr. D. R. Stubblefield, dean of the department, then went briefly over the work of the year, spoke of the pride of the university in sending out a thoroughly equipped body of workmen and in a few happy remarks presented the class.

Chancellor Kirkland made a short talk and conferred upon the members of the class the degree of Doctor of Dental Surgery.

The class roll follows: R. P. Abbott, Mississippi; Thomas Brown, Tennessee; J. C. Burnham, Tennessee; P. M. Taylor, Mississippi; M. R. Hull, Texas; A. M. Manon, Louisiana; M. J. Murray, Tennessee; W. S. McKinstry, Tennessee; M. E. Shewmake, Arkansas; Miss Lynne Pearcey, Indiana; R. L. Senter, Mississippi; J. R. Stokes, South Carolina; V. Taylor, Tennessee; W. T. Walker, Alabama; C. W. Kranz, Alabama; J. W. F. Williams, Kentucky.



NOTICES OF MEETINGS

National Dental Association, Asheville, N. C., July 28.
National Association of Dental Examiners, Asheville, N. C., July 24, 25, 26 and 27.

State Dental Meetings.

California State Dental Society, San Francisco, June.
Colorado State Dental Association, Denver, June 16, 17 and 18.
Georgia State Dental Society, Tallalab Falls, June 9.
Florida State Dental Society, Seabreeze Beach, May 27.
Idaho State Dental Society, Boise City, June 9.
Indiana State Dental Association, Indianapolis, June 30, July 1.
Maine Dental Society, July 21, 22 and 23.
Kentucky State Dental Association, Louisville, May 25, 26, 27.
Michigan Dental Association, Petoskey, July 7, 8, 9.
Massachusetts State Dental Society, Boston, June 3 and 4.
Minnesota State Dental Association, Minneapolis, Sept. 1.
New Jersey State Dental Society, Asbury Park, July 15, 16, 17.
Ohio State Dental Society, Columbus, Dec. 1, 2 and 3.
Tennessee Dental Association, Chattanooga.
Wisconsin State Dental Society, West Superior, July 21, 22, 23.
Texas State Dental Association, Houston, May, 1903.
Pennsylvania State Dental Society, Harveys Lake, July 7, 8, 9.

NATIONAL DENTAL ASSOCIATION.

MEETS AT ASHEVILLE, N. C., TUESDAY, JULY 28.

Preparations are being made for one of the best meetings in the history of the association. The section officers are preparing a program which, from a scientific and practical standpoint, will be difficult to excel. The clinics will be made a special feature.

All dentists interested in the advancement of the profession should attend this meeting.

All state and local societies should elect delegates who will be sure to attend the national meeting, they being entitled to one delegate for every six of their members.

The usual railroad rates will be had on all roads in the United States and part of Canada—one fare and a third, on the certificate plan.

A. H. PECK, Rec. Sec'y. L. G. NOEL, President.

WISCONSIN STATE DENTAL SOCIETY.

The thirty-third annual meeting of the Wisconsin State Dental Society will be held at West Superior, Wis., July 21, 22 and 23, 1903. The usual railroad rates will be obtained. The profession is cordially invited to be present.

T. M. WELCH,
President.

W. H. MUELLER,
Secretary, Madison, Wis.

SOUTH DAKOTA DENTAL SOCIETY.

The annual meeting of the South Dakota Dental Society will be held at Redfield, S. D., June 3, 4 and 5. Meeting begins at 10 a. m., June 3. A fine program is assured, with Dr. J. P. Buckley of Chicago as clinician in charge. All reputable dentists of this and other states cordially invited. The State Board of Dental Examiners will be in session at the same time and place.

W. W. PRICE, Secretary, D. ST. I. DAVIES, President,
Centerville, S. D. Woonsocket, S. D.
Colorado State Board.

ALPHA UPSILON PI SORORITY.

The annual banquet of Alpha Upsilon Pi Sorority, the only known association of women dentists, was held April 11 in the Red Room at Delmonico's, San Francisco, Cal.

SOUTHEASTERN DISTRICT OF MASSACHUSETTS.

The annual meeting of the Southeastern District of the Massachusetts Dental Association was held April 16 at Fall River, Mass.

CHICAGO DENTAL SOCIETY.

At the annual meeting of the Chicago Dental Society, held April 8, the following were elected officers for the ensuing year: Presi-

dent, Don M. Gallie; first vice-president, W. H. Taggart; second vice-president, W. G. Dittmar; recording secretary, Winthrop Girling; corresponding secretary, A. E. Morey; treasurer, C. P. Pruyn; librarian, J. H. Woolley.

DETROIT DENTAL SOCIETY.

The semi-annual banquet of the Dental Society was held at the Hotel Ste. Clair. Dr. Charles H. Oakman presided as toastmaster and toasts were responded to as follows: "Progression," Dr. Don N. Graham; "The Successful Man in Life," Dr. George F. Burke; "Patients and Patience," Dr. G. C. Bowles.

M'LEAN COUNTY DENTAL SOCIETY.

The McLean County Dental Society held its regular meeting April 17. Dr. W. H. Land read a paper on "Constructive Diseases of the Dental Pulp." Discussion was opened by Dr. B. M. Van-Dervoort. Plans for entertainment of Illinois State Society, May 12, were also discussed.

COLORADO STATE BOARD.

The Colorado State Board of Dental Examiners will meet at Denver June 2, 1903. All applications for examinations must be filed with the secretary before that date.

M. S. FRASER, Secretary.

THE JACKSON (MICH.) DENTAL SOCIETY.

The Jackson Dental Society of Jackson, Mich., held its fourth annual meeting April 20 at the office of Dr. Howlett, and in the evening attended a banquet given by the society. Dr. J. W. Lyon was elected president and Robert O. Curtis secretary and treasurer of the society.

MINNESOTA DENTAL BOARD.

The Board of Dental Examiners of Minnesota held its annual meeting and election of officers April 25. Dr. F. E. Moody of Minneapolis was re-elected president and Dr. C. H. Robinson secretary and treasurer. Of seventy-five applicants, eleven were granted licenses.

The largest class in the history of the Northwestern Dental School was graduated April 30. One hundred and seventy-five students received their diplomas.

The dentists of Birmingham, Ala., met April 28 in the office of Perkins Bros. and organized the Jefferson County Dental Association.

RACINE DENTAL SOCIETY.

The Racine Dental Society held its monthly meeting at Racine, Wis., April 27. After the business was transacted a banquet was held. Among the matters of business the society passed a resolution to invite the Wisconsin State Southern Dental Society to meet there in 1904.

EIGHTH DISTRICT DENTAL SOCIETY, N. Y.

The annual meeting of the Eighth District Dental Society of Buffalo, N. Y., was held April 28. The organization includes about 100 of the best known dentists in Buffalo and nearby cities and towns.

EIGHTH DISTRICT SOCIETY OF NEW YORK.

At the Eighth District Dental Society's annual meeting held at Buffalo, N. Y., April 28, the following officers were elected: President, Dr. A. J. Leake of Lockport; vice-president, Dr. Robert Murray of Buffalo; recording secretary, Dr. Emanuel Muntz; corresponding secretary, Dr. G. W. Pringle, Niagara Falls; treasurer, Dr. Louis C. Meisburger, Buffalo; librarian, Dr. Samuel A. Freeman, Buffalo.

CHICKASAW NATION DENTAL SOCIETY.

The Dental Society of the Chickasaw Nation, I. T., has been organized with the following officers: Dr. Abernathy, president; Dr. Nicholson, vice-president, and Dr. Pennell, secretary and treasurer.



MAYOR'S ADDRESS OF WELCOME TO IOWA STATE MEETING.

Mayor E. W. Caldwell's address before the Iowa State Dental society at its forty-first annual meeting at the Chamber of Commerce hall May 5th was characteristic and in the chief executive's happiest vein. He said:

Mr. President and Members of the Iowa State Dental Society: I am here, as mayor, on behalf of the people of Sioux City, to extend to you a full upper and lower set of their most cordial welcomes.

Most of us would much rather welcome a dentist at any time than have to be welcomed by him—in his professional capacity. One of the very dearest friends I have is a dentist; and still when I go to his office to have even a little tinkering done, I can't arouse a single thrill of enthusiasm over the visit—not even the least little flutter. But when he comes to see me my heart bounds with gratification as I grasp his hand. And in that same spirit Sioux City grasps the hands of the Iowa State Dental society to-day, on the occasion of its forty-first annual meeting. Just let the thrill of it tingle through every fiber of your anatomy and keep it thrilling during all your stay.

During my residence of nearly half a century in the Hawkeye state, I have been prepared to believe almost anything as to the spirit of progress among its people; but, candidly, I have been astounded at the record of this society. So far as I can discover, it is the odlest state dental organization in the country. It was established in 1862, beating Massachusetts by two years, and antedating New York or Pennsylvania by six years.

Organizations such as these are recognized as one of the three great factors in the progress of dentistry. It was just before the middle of the last century that the profession bounded into something like independent existence in America. It was at that time that the first dental school was established, the first dental society organized and the first dental publication begun. These three creations are credited with being the foundation of the marvelous development the profession has enjoyed. During the earlier years of the 40s and 50s the organizations were merely local affairs, but in 1862 the dentists of Iowa associated themselves for discussion of methods and for raising the standards of the profession—thus leading among all the states in the matter of establishing a state society that has been able to endure until this time.

If the association idea is to be credited with one-third of the tremendous progress made by the dental profession, and if the Iowa State Dental society has been educating its members for a longer period than any similar organization, who will dare to question the declaration that the average of capability among the dentists of Iowa must be higher than can be boasted by any sister

state in this union? Whoever may have had the very most of the very best must be a winner. Of course, Sioux City is proud to welcome representatives of an organization with such a pedigree.

I have had some personal experience as to the progress of dentistry in Iowa, even if I am still classed as a mere boy—of nearly three score years. Shortly after striking the state in 1856, it was discovered that one of my eye-teeth was loose. In order to extract it, I tied to it one end of a string, the other end being tied to the doorknob, and then I shut my eyes and slammed the door. The tooth departed; but its successor, in coming in, hunted a new route, and finally came down through the roof of my mouth—so that every time circus posters are displayed in town, with the open countenance of the hippopotamus showing his tusks, my wife remarks to me:

"There's your photograph."

And it seems to me that when my dentist looks into my mouth, and sees how I have cut at least one of my eye-teeth on the bias, a glitter of anticipation comes into his eyes as he thinks of the fun he'll have with me when he tackles that runaway cuspid, and its nerve is tickled and nibbed by bacteria of various sorts. He declares that if I am built all over like I am in the rest of my teeth I will last forever, so he feels sure of getting a whack at it.

And when I think of it, how ardently I wish that in 1856 I might have found a capable dentist to take care of my teeth, as you gentlemen care for the teeth of children of this day and age, plucking the deciduous organs in time to prevent them from giving their permanent successors the bum steer. It strikes me that this prophylactic work of yours, for the prevention of agonies that are quite certain to come if the teeth are not properly cared for, is the greatest and best contribution dental science makes to the world, even if generally it isn't so highly appreciated as some of your more spectacular achievements. It's ever so much better to prevent the necessity for false teeth than to turn out the handsomest set that ever counterfeited nature.

I remember some of the earlier work of Iowa dentists in the perpetration of false teeth—each tooth just about the same size and shape of its neighbors, all of them lustrous white, set in gums of the profoundest vermillion hue, so that every time the owner opened his or her mouth beholders were startled with the display. But the most that was wanted in those days was something that could chew, as was indicated by the query of the old woman:

"Can a body eat with those things?"

"Oh, certainly," said the dentist; "you can masticate as well with them as with the natural teeth."

"Yes, I know that," she replied; "but can you eat with them?"

And what improvements there have been in the methods of extracting teeth! I remember the old turnkeys, which were such villainous looking implements that a sight of one produced partial anesthesia by frightening the patient out of his wits, thus conferring unexpected blessings by dulling the pain of the operation. They were used by general practitioners of medicine as well as by dentists for all sorts of pulling. Now each particular tooth has its own special forceps, and there are elevators for extracting extraordinarily

stubborn specimens, and tooth pulling has ceased to be so much of a massacre. And there are local anesthetics which save patients from the general hilarity of laughing gas or the wholesale unconsciousness of ether or chloroform—some of the partakers of which sometimes get things sadly mixed as they are recovering from the drug—for instance, the woman who as she wakened after having a very hard tooth pulled, asked:

"Is it a boy or a girl?"

But the improvements that have been effected, elevating dentistry from a trade to a profession, from a sort of side line for the barber or the blacksmith to a well defined science, are only steps toward better and still more wonderful things. Nobody can predict what the current century is to see, not only in that branch of your profession pertaining to the teeth, but in oral medicine and surgery in general. "The corroding teeth of time" may gnaw and demolish many things in this old world of ours, but dentistry will look out that the incisors of the old man with the scythe shall nibble nothing from the art to which the Iowa State Dental society has contributed so much during the two score years of its existence.

Congratulating the society on its splendid past and its inevitable future, again I declare the welcome which Sioux City has for the eminent gentlemen who are and are to be her guests.—Sioux City Journal.

Dr. Chas. S. Tuller, formerly associated with his father in Chicago, has a fine practice in Shreveport, La.

Walter P. Fundenberg, Pittsburg, Pa., son of Walter H. Fundenberg, 5805 Fifth avenue, professor of dentistry in the Pittsburg Dental college, was killed April 26 by a train on the Pennsylvania railroad.

Dr. Samuel R. Neidegh has bought the practice of Dr. Verbeck of Freeport, Ill., his home town, and will be in his office after May 15.

John A. Brooks, a well known dentist of Erie, Pa., met with a terrible accident April 24. He was riding his bicycle very rapidly when the front forks broke and he was thrown head first against a stone street curbing. His nose was smashed, all his teeth knocked out and the upper and lower jaws broken, the latter being driven backward into the throat and neck. He is in a very precarious condition.

Dr. Samuel Hoblit of Lincoln, Ill., was robbed of \$35 worth of supplies April 22.

Dr. N. H. Brigham of Shelby, Neb., expects to locate soon in North Bend, Neb., where he will continue the practice of dentistry.

Mrs. Isabel Whitehurst of Cumberland, Md., has been awarded \$150 damages for several teeth a dentist pulled without her consent. Mrs. Whitehurst had gold crowns put on her teeth by a dentist, for which she was to pay in installments. The work proved unsatisfactory, and then she says the dentist, without warning, pulled out the teeth, saying he was taking back the gold that was not paid for.

Dr. J. E. Packard of Brockton, Mass., died April 20 at the age of 70 years.

Dr. Harry Barnes of Plainwell, Mich., has recently purchased the dental practice of Dr. A. E. Campbell at Lowell, Mich.

Dr. J. Finkhause, formerly of Peoria, Ill., is now located at Elkhart, Ill.

William Londegreen, a dentist of Brooklyn, N. Y., was robbed April 17 of material amounting to \$55.

Dr. T. A. Lyon of Camp Point, Ill., is dead. He was in his 72d year.

Laura Beckman, an insane patient at Mercy hospital, Davenport, Iowa, found a set of false teeth and tried to wear them, although she had a good set of natural teeth. The false teeth slipped down her throat and choked her to death in five minutes.

NEW YORK STATE DENTAL SOCIETY AND THE STATE LEGISLATURE.

The Dental society of the state of New York is very anxious to get William E. Walker, who has opened "dental parlors" in various up-state towns in the last eight years, to tell them before a court how old he is. They'd also like to know what right he has had to practice dentistry at all.

The authority on which he has been operating is a diploma of the Wisconsin Dental college, dated 1883, which he caused to be registered in Rensselaer county in 1895, at the same time swearing that he was 33 years old. He also swore to a "dentist's affidavit" before the clerk of Columbia county six years later, and it contains the information that at the time of swearing he was 32.

A further mathematical complication is furnished by the Rensselaer County Dental Registry, in which the date of the issuing of the diploma appears to have been changed from 1883 to 1893.

This confusion, together with the fact that the Wisconsin Dental college is not on the Regents' list of reputable colleges, is leading the Dental society to oppose a bill introduced at Albany by Senator Barnes twelve days ago. The bill is entitled "an act to legalize, ratify, and confirm the acts of the county clerk of the county of Rensselaer in issuing to William E. Walker a certificate of registration and authorizing said William E. Walker to practice the profession of dentistry."

"It's a most vicious bill," said Counsel Purrington of the Dental society yesterday. "We've been after this man Walker for unlawful practice for the last five years. We warned him first on June 3, 1898, when he had a 'parlor' in a suburb of Troy. In February, 1900, we warned him again, and he tried to rush two bills through the legislature, the terms of which made a legitimate dental diploma not essential to practice. These bills were defeated.

"Last month he did some work in the mouth of George I. Chace of Chatham. We got an affidavit from Chace showing that Walker had practiced on him. But now, when we start proceedings against Walker, not only does a state senator introduce a bill seeking to give him a title and power that he has never earned, but County Judge Sanford Smith, before whom our case must come, went up last week and defended Walker before a senate committee."

Mr. Purrington also said that when he wrote to Senator Barnes asking for a copy of his bill he received no answer, and that neither the regents nor the society were informed of the hearing which the committee held before

recommending the bill for passage. Mr. Purrington caused another hearing to be given on Thursday. The fate of the bill is still in the balance.

SUIT AGAINST DENTIST ENDS.

The trial of the \$10,000 damage suit of Edna Fredericks vs. Dr. Edward Reiss at Terre Haute, Ind., was decided in favor of the dentist April 10. Miss Fredericks alleged in her complaint that she became afflicted with a blood disease as a result of having a tooth extracted by Dr. Reiss.

Dr. W. A. Neece has located in Alexis, Ill.

Dr. Leona A. Dix, formerly of Mitchell, is now located at Aberdeen, S. D.

SAYS IT MADE HER SICK.

W. E. Gage and wife, by Crow & Williams, their attorneys, have brought suit in the Superior court against F. M. Stine, doing business under the name of the Philadelphia Dental parlors, placing the damages at \$575. The complaint alleges that on February 13 last Mrs. Page went to the dental parlors and had some teeth extracted and other dental work performed; and that in performing the work the defendant used cocaine and other anesthetics in an improper and careless manner, causing her to become sick, and that she was confined to a hospital for two weeks as a result, and was obliged to pay out \$75 in doctors' fees. She asks for damages of \$500 and the amount she was required to pay in doctors' fees.

Dr. George McKirgan, Passaic, N. J., was found dead in his office on the morning of April 8. He apparently had taken an overdose of morphine. A bottle of the drug was found near the body. Dr. McKirgan practiced in Newark for a number of years, and then in Paterson. He had been practicing in Passaic about one year.

Rosa Patterson, a domestic, filed suit against the New York Dental company April 9 for \$1,000 damages for personal injuries. Miss Patterson alleges in her first cause of action that in April, 1902, she contracted with the company to make her two zylonite plates of artificial teeth for \$30. These plates, she says, were carelessly and negligently fitted to her mouth and gums, rendering the latter sore. She says she was unable to work for eight weeks, and that she required the services of both dentist and physician. On this cause of action she demands \$500 damages. Secondly, Miss Patterson alleges that in July, 1902, while the agents of the company were working on her mouth, she was severely beaten and bruised around the face, neck, and head, causing those portions of her body to become discolored and sore. On this cause of action she also demands \$500.

Emperor William has conferred on Dr. A. P. Sylvester, one of Berlin's pioneer American dentists, the title of court councilor.

Dr. C. B. Payton, formerly of Bedford, Iowa, is now located at Chadron, Neb.

Dr. Harry Ferguson, formerly of Waupun, Wis., is now located at St. Paul, Minn.

Dr. E. E. McStay of Waterloo will locate in Manchester, Iowa.

The suit against Dr. Percy C. Hammersmith of Buffalo, N. Y., by Miss Laura Kirkover for \$10,000 damages for breaking off a piece of drill in one of her teeth, so that an abscess formed, was begun April 6 in the Supreme court. After deliberating for twenty hours the jury failed to agree and a new trial will be had.

Dr. Bromm Allen of Chicago will give up general practice and become a specialist in extraction of teeth, locating in the Trude building.

J. H. Swan, dentist.—If the husbands of many of the ladies who come for treatment would hear them yell they would send in the delinquent checks to-day.—*Kansas City World.*

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